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Arizona Range Reference Areas

Raymond M. Turner, Lee H. Applegate,
Patricia M. Bergthold, Steve Gallizioli,
and S. Clark Martin



General Technical Report RM-79
Rocky Mountain Forest and
Range Experiment Station
Forest Service
U.S. Department of Agriculture

Turner, Raymond M., Lee H. Applegate, Patricia M. Bergthold, Steve Gallizioli, and S. Clark Martin. 1980. Arizona range reference areas. USDA Forest Service General Technical Report RM-79, 34 p. Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colo.

Range reference areas (exclosures and remote areas) provide a historical record of vegetation that has not been influenced by livestock grazing. In Arizona, 380 exclosures can be used for research and management. Location, controlling agency, year of establishment, and vegetation information are provided for each reference area.

Keywords: Natural areas, range exclosures, range management, Arizona.

Acknowledgments

The authors are indebted to David E. Brown for the early stimulus that started this program and to Dale A. Jones for early guidance. This project could not have been completed without the active interest of many persons in the agencies listed. The authors also thank the Arizona Department of Transportation for permission to use their highway map as a base for the map accompanying this report, and Lyle K. Sowls for his help in locating one of the photographs used.



Plant a tree! Mark the 75th birthday of the Forest Service by giving a living gift to future generations.

Arizona Range Reference Areas

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INTRODUCTION

Most Arizona rangeland probably has been grazed by livestock for more than a century. Changes in vegetation on some of these rangelands are so marked and so extensive that current concepts of natural vegetation are based on landscapes that are quite unlike those present before human obtrusion. Much of this vegetation change has been attributed either directly or indirectly to livestock grazing. The role of grazing in changed southwestern landscapes can be evaluated by comparing vegetation of grazed and ungrazed tracts on similar sites. Opportunities for such comparisons in Arizona are limited to a few "remote" areas that have not been accessible to livestock because of distance from water or by rugged topography and to areas where livestock have been excluded by fencing.

In the early 1900's, several areas on western rangelands were fenced to permanently exclude livestock. These "exclosures," established by various agencies, were used to evaluate grazing impacts and to serve as standards for judging range condition. Other exclosures were designed to test interactions between livestock and big game or livestock and rodents. Another class of range reference area includes lands that have not been grazed by livestock because of physiographic inaccessibility. Because these tracts have always been protected from domesticated herbivores, they are especially useful in judging human influence on similar, adjacent tracts.

References from which to judge vegetation changes are essential for many ecological studies of rangeland resources. Range reference areas may provide isolated, relatively stable enclaves in surrounding natural ecosystems that are changing rapidly, or even vanishing, as land-use patterns change. As human impact on the environment increases, the value of reference areas will increase (Moir 1972).

For these reasons, the Society for Range Management (SRM) established the Reference Area Program in 1966 (Anderson 1966, Laycock 1975). The objective of this program has been to publish a comprehensive list of exclosures and remote areas on rangelands in North America. To date, compilations for Wyoming (Williams 1963), Utah (Laycock 1969), and Nebraska (Nebraska Section 1973) have been published.

In 1973, a team that included representatives from two state and two federal agencies began compiling

this list for Arizona. The Arizona State Parks Board, as administrator of the State's Natural Areas Program, has interest in rangeland reference areas; the Arizona Game and Fish Department uses exclosures and remote areas as part of its wildlife research program; the USDA Forest Service similarly uses exclosures and remote areas for wildlife habitat and range research as well as for judging range conditions and trends on its grazing lands; and the U.S. Geological Survey has an interest in such areas for studies of the relationships between vegetation change and climate change, and between soil erosion and vegetative cover.

Those who use this list of reference areas should be aware of its limitations. Some of the exclosures are so small that perimeter effects influence their value. The records used as a source of data for this compilation are not complete, and, in most cases, the person administratively responsible for the reference area has no first-hand knowledge of when or under what conditions it was established. Consequently, those wishing use of a reference area may need to do some further checking. Although most of the published entries were checked by the agencies, any errors remain the responsibility of the authors. Readers are asked to report any exclosures or remote areas omitted.

EXAMPLE EXCLOSURES

Measurements, notes, and photographs from reference areas provide a partial account of changes that have occurred. Four examples are included.

In northern Arizona, much former grassland has been occupied by juniper (*Juniperus osteosperma*) and pinyon pine (*Pinus edulis*) and small shrubs (snakeweed [*Gutierrezia microcephala*] and rabbit brush [*Chrysothamnus nauseosus*]). Biological Survey Plot No. 2 (Area 275) was built on the Kaibab National Forest in 1918 to study interactions between prairie dogs (*Cynomys gunnisoni*) and cattle. At that time, Taylor and Loftfield (1924) stated that the edge of the pinyon-juniper formation was a short distance from the plot, that the overgrazing had progressed so far that the grasses were more than half replaced by shrubs such as snakeweed and rabbitbrush and that washing was quite noticeable as evidenced by exposed grass roots. A photograph of the plot by W. P. Taylor, August 11, 1929, shows former grassland dominated by small shrubs with pinyon-juniper woodland in the back-

ground (fig. 1a). Many small trees can be seen in and around the woodland, a clear sign that the woodland was expanding by this early date. By 1978, juniper and other shrubs occupied the plot and obscured much of the background that was visible in 1929 (fig. 1b). This pair of photographs illustrates an important limitation that must be remembered when interpreting exclosures. Most, if not all, were established after at least several decades of grazing. Even after long-term livestock exclusion, conditions of the pregrazing era may not quickly return, especially if erosion and plant conversions have progressed far.

Changes in the Sonoran Desert landscape have been less striking perhaps than those in northern Arizona. Near Tucson, the Carnegie Institution of Washington fenced an 869-acre tract in 1907 for its Desert Botanical Laboratory at Tumamoc Hill (Area 109). The area had probably been grazed frequently by livestock for at least 20 years and may have been grazed sporadically much longer. Shreve (1937) stated that grazing probably was not great enough to seriously disturb the larger plants but that numbers of grasses and smaller perennials probably were greatly reduced. Records of vegetation observed on a plot 10 meters square in 1906 (fig. 2a) and 1978 (fig. 2b) show that the number of woody and succulent plants increased from 53 in 1906 to 269 in 1978. Plant densities in 1906 and 1978 are compared below for the four species with greatest abundance during each of those years:

	1906	1978
Yellow paper-flower (<i>Psilostrophe cooperi</i>)	32	0
White-thorn acacia (<i>Acacia constricta</i>)	6	4
Fendler hedgehog cactus (<i>Echinocereus fendleri</i>)	4	1
Jumping cholla (<i>Opuntia fulgida</i>)	2	0
Triangle-leaf bursage (<i>Ambrosia deltoidea</i>)	0	242
Creosotebush (<i>Larrea tridentata</i>)	1	7
Christmas cactus (<i>Opuntia leptocaulis</i>)	0	5

Perhaps it is noteworthy that none of the woody or succulent plants present is considered to be a valuable forage plant. The most striking changes are the loss, by 1978, of yellow paper-flower and the appearance of large numbers of triangle-leaf bursage. Because both plants are unpalatable to livestock, this species change cannot be attributed directly to cessation of grazing and is assumed to be the result of differences in the ways individual species respond to each other and to drought, freezing, or other climate factors.

Much semidesert rangeland in southern Arizona that was grassland in 1900 is now dominated by velvet mesquite (*Prosopis velutina*). Examples of this change have been photographed on the Santa Rita Experimental Range. The Range was fenced and all cattle were removed in 1903. Grazing resumed as grazing studies

were expanded about 1912, and a number of exclosures were established within the grazed area between 1916 and 1920. The site of one of these exclosures (Area 189) was photographed first in 1905 (fig. 3a) and fenced in 1918. Grass stands that were cut for hay in 1905 became much too sparse for such use and were overtopped by moderate stands of mesquite in 1961 (fig. 3b).

Another Santa Rita exclosure (Area 200) was built in 1921 and is near permanent water in an area that is grazed all year. Mesquites reportedly were only 12-13 inches tall in 1923. Photographs taken along the fence line in 1930, 1952, and 1978 show progressive development of the mesquite stand inside the exclosure as well as outside (figs. 4a, 4b, and 4c). The two earliest photographs show the grass on the outside to be closely cropped in contrast to the taller ungrazed stand inside. By 1978, however, a second change had occurred. The dominant native perennial grasses, sprucetop grama (*Bouteloua chondrosioides*) and slender grama (*B. filiformis*), had been largely replaced by Lehmann lovegrass (*Eragrostis lehmanniana*). The new grass, an introduced species, is less palatable than the native perennial grasses, and it grows more vigorously in the presence of mesquite. The lack of apparent difference in grass cover caused by cattle exclusion in 1978, therefore, probably resulted from the cattle grazing native perennial grasses in other parts of the pasture instead of grazing Lehmann lovegrass around the exclosure.

DESCRIPTION OF INCLUDED INFORMATION

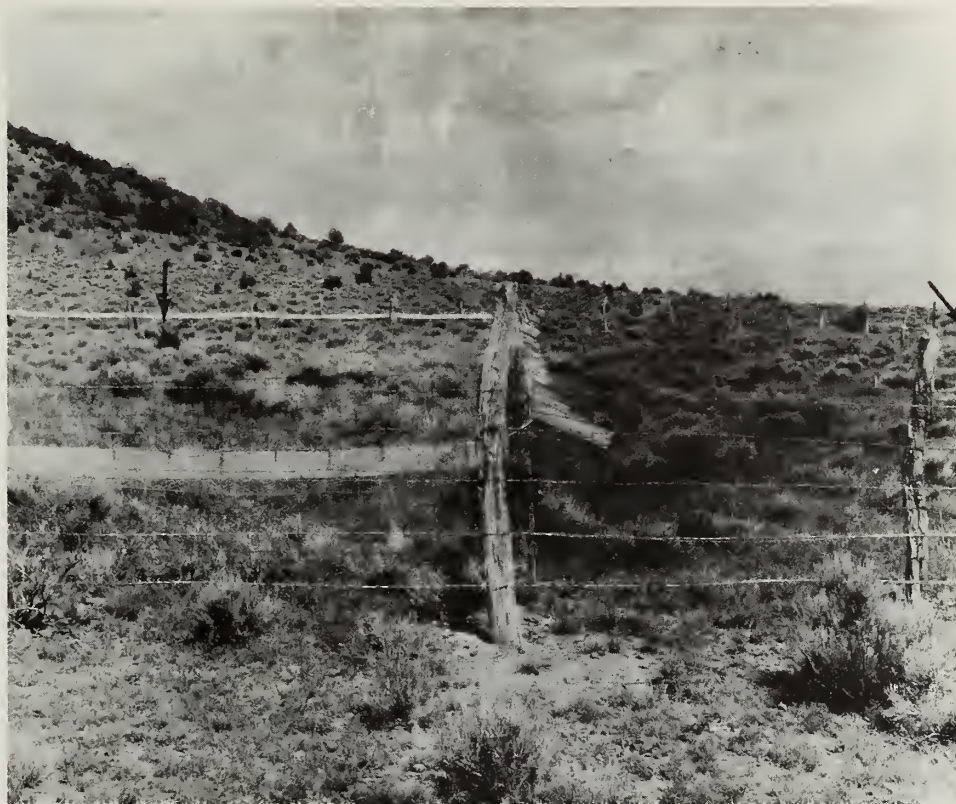
An inventory form was used to obtain information from agencies responsible for exclosures and remote areas. The form used (fig. 5) was a modification of that devised by Laycock (1969). These forms were distributed to several agencies during the spring of 1977.

The information published in this report is presented in the following order:

Agency.—This item gives the name of the owner or agency with administrative responsibility for the land on which the reference area is located. Names of USDA Forest Service or Bureau of Land Management districts appear as subheadings.

If other than the land owner or managing agency has built or maintained the exclosure, the cooperating agency is noted by abbreviation in parentheses after the name of the exclosure:

PL	Private land
AGF	Arizona Game and Fish Department
SCS	Soil Conservation Service
BLM	Bureau of Land Management
UA	University of Arizona
ARS	Science and Education Administration (formerly Agricultural Research Service)



a



b

Figure 1.—Vegetation change in northern Arizona. (a) Plot fenced in 1918 (area 275) supported a mixture of small shrubs and grasses with pinyon and juniper in background in 1929. Arrow marks a small juniper. (b) By 1978, juniper grew densely in the plot. The conspicuous grass is bottle-brush squirrel tail (*Sitanion hystrix*). Other grasses present are blue grama (*Bouteloua gracilis*) and sand dropseed (*Sporobolus cryptandrus*).



Figure 2.—Seventy years of desert vegetation change near Tucson, Ariz. (area 109). (a) Condition of vegetation shortly before livestock were excluded (picture was taken in 1906)—the dominant low shrub was yellow paper-flower (*Psilostrophe cooperi*). (b) Seventy-two years later (1978)—the dominant low shrub now is triangle-leaf bursage (*Ambrosia deltoidea*).



Figure 3.—An example of change from grassland to shrubland. (a) A pile of native grass hay cut from the Santa Rita Experimental Range two years after cattle were fenced out (1905). (b) The same area 56 years later (1961) supports a moderate stand of velvet mesquite and sparse perennial grass cover. Mesquite has become established in the exclosure (Area 189), built in 1918, at about the same rate as on grazed range.



Figure 4.—Three views of Santa Rita Experimental Range Plot No. 14 (Area 200). (a) In 1930, after 9 years of protection the grass is taller inside the plot (left) partly because the grass outside is closely grazed. (b) By 1952, mesquites are larger than before and more numerous on both sides of the fence. The grass outside continues to be heavily grazed. (c) In 1978, a story of grasses intermingles with mesquite on both sides of the fence.

INVENTORY OF RANGELAND REFERENCE AREAS IN ARIZONA

OWNERSHIP (Name of National Forest if FS): _____
NAME OF DISTRICT (BLM & FS): _____
NAME OF AREA (or proposed name): _____
LOCATION: Quarter section _____, Section _____, Township _____, Range _____, County _____
ALTITUDE: _____ EXPOSURE: _____ SLOPE (%) _____
GENERAL DESCRIPTION OF AREA: _____
DATE ESTABLISHED: _____ Subsequent Alterations: _____
SIZE AND DIMENSIONS: _____
NO. OF PARTS (IF ENCLOSURE): _____
TYPE AND HEIGHT OF FENCE (EACH PART): CONDITION OF FENCE: DATE OF LAST OBSERVATION:

In good condition
Needs minor repairs
Needs extensive repairs
VEGETATIVE COMMUNITY (Specify 5th level in Brown and Lowe system, if known): _____
SAF FOREST TYPE NUMBER AND NAME (if applicable): _____
SCS RANGE SITE NAME (if known): _____
OTHER CLASSIFICATION: _____
MAJOR SPECIES (3 most abundant—Use SCS National List of Scientific Plant Names): _____

OTHER SPECIES PRESENT (List as many as possible): _____

MANAGEMENT OR USE DURING PAST 50 YEARS (if known): _____

CATEGORY DESIGNATION: (Check one)

Research Natural Area

Managed Range Study Area

Kind of livestock managed: _____

Enclosure

Kind of livestock or animals excluded: _____

Other Reference Area—Important features: _____

PLEASE FILL IN AS MANY BLANKS AS POSSIBLE ON BOTH SIDES OF THIS FORM AND INCLUDE A MAP OR MAP COPY SHOWING LOCATION OF AREA.

VEGETATION TREATMENTS (seeding, spraying, etc.) if any: _____
VEGETATION SAMPLING:
Has vegetation in area been sampled? _____ When and by what methods? _____
Has range outside area been sampled? _____ When and by what methods? _____
Where are records retained? _____
Is the outside plot marked? _____ How? _____
PHOTOGRAPHS:
Have photographs been taken of the area? _____ Grazed area? _____
If so, when? _____
Black and white _____ Color transparency _____
Where are photos and/or negatives filed? _____
Is area on aerial photography? _____ Date: _____ Where filed? _____
GEOLOGICAL FORMATION: _____
SOIL TYPES: _____
Soil depth: _____
Has profile been described? _____
(If soil survey has been made of the area, attach a copy)
BUFFER AREA: _____
Is one officially designated? _____
Size: _____
Is it marked? _____
GENERAL COMMENTS: (Evidence of rodents, insects, disease, or other influences): _____

REPORTED BY: _____ TITLE: _____ DATE: _____

Send completed forms and requests for more forms to: Raymond M. Turner, U.S. Geological Survey, 301 West Congress Street, Tucson, Arizona 85701

LARGE REFERENCE AREAS ARE SPECIAL PROBLEMS. FOR THESE SHOW EXTREMES IN ALTITUDE, IN VEGETATIVE COMMUNITIES, ETC.

Figure 5.—Example of form used to report reference area information.

Sequence number.—A number is assigned to index each reference area in the order it appears in the publication.

Name of area.—The name listed is that appearing on the inventory form. In a few cases where no name was supplied, a name was invented based upon some nearby physiographic feature.

Location.—The location for small reference areas is given to the nearest one-fourth section. For large reference areas (e.g., Grand Canyon National Park) no location is given; readers must depend on the map accompanying this report. Some areas of intermediate size are located by one-half section or by township(s) only. In a few instances, where the reference area lies in a portion of Arizona where a cadastral survey has not established township lines, location is given as latitude and longitude under Comments.

County.—The county in which the area is located is noted. For areas that occur in two counties, one is noted under Comments.

Elevation.—Units are in feet. Where areas are large, the range from the lower to the upper elevation is listed.

Vegetation.—This information is given in numeric form. To find the equivalent vegetation community, see appendix 5. The classification system is from Brown and Lowe (1974a, 1974b) and Brown et al. (1979) and uses the numeration in the RUNWILD II Program of the Rocky Mountain Forest and Range Experiment Station and the Southwest Region, USDA Forest Service (Patton 1978). Only one major southwestern biome (alpine tundra) is not represented as a reference area.

Size.—Where known, the size of the reference area is given as area (acres or square miles) or as dimensions (feet or miles).

Date of establishment.—For some areas, the year of establishment is unknown. No date is shown for inaccessible areas.

Vegetation sample.—An agency responsible for a reference area sometimes has vegetation sampling data in its files. If so, access to these data is through the administering agency only.

Photographs.—If an agency has photographs of a reference area in its files, access to these photographs is through the administering agency only.

Animals excluded.—The items appearing here are, in most instances, just as they appeared on the inventory forms. The term "rodent" can be taken to include lagomorphs (rabbits and hares), in most instances.

Comments.—The last statement appearing on some of the entries gives various additional information, including publications listed in the Literature Cited section, that describe the reference area or research conducted in the reference area.

To increase the usefulness of the listing, several appendixes list the reference areas by county, date of establishment, elevation, excluded animals, and vegetative type. Reference areas are indexed by sequence number.

In addition, a map (scale of 1:1,000,000) showing the location of all the areas and the size of the larger areas is enclosed. Each is identified by the sequence number used in the text. In some instances reference areas might be located in the field by use of this map alone; finding most will require a map of larger scale, however.

Before studying exclosures or inaccessible areas, contact the owner or administrative agency first to avoid disturbing studies that may be in progress.

ABBREVIATIONS LIST

AGF	Arizona Game and Fish Department
ARS	Science and Education Administration (formerly Agricultural Research Service)
ASPB	Arizona State Parks Board
BLM	Bureau of Land Management
BTSA	Boyce Thompson Southwest Arboretum
IBP	International Biological Program
LDS	Latter Day Saints
NRA	National Recreation Area
PL	Private land
SAEF	Sierra Ancha Experimental Forest
SCS	Soil Conservation Service
SRER	Santa Rita Experimental Range
UA	University of Arizona
USFS	USDA Forest Service

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REFERENCE AREAS

ARIZONA GAME AND FISH DEPARTMENT

1. Becker Lake: Sec. 19, 20, 29, 30, T9N, R29E; Apache; 7,000 feet; 422.00, 621.00;
a. 337.75 acres; 1974; cattle.
2. Black Butte Mesquite Bosque: T1S, R4W; Maricopa; 800-870 feet; 233.10, 233.20, 531.70;
a. 1,191 acres; 1971; photos on file; livestock; area contains virgin bosques of mesquite.
3. Black Canyon Range: Sec. 28, T6N, R2E; Maricopa; 1,500-2,000 feet; 531.10;
a. 1,709 acres; 1963; cattle; partly in sec. 33.
4. Concho Lake: Sec. 18, T12N, R26E; Apache; 6,000 feet; 422.00, 621.00;
a. 30 acres; livestock; public fishing site, establishment date unknown.

5. Cunningham Tracts: Sec. 7, 8, 18, T9N, R15E; Gila; 5,968 feet; 221.20, 421.20;
a. 62.5 acres; 1952; cattle.
b. 42.5 acres; 1952; cattle.
6. Duran Ranch: Sec. 9, T12N, R14E; Coconino; 7,200 feet; 421.10;
a. 31.40 acres; cattle; partly in sec. 16, establishment date unknown.
7. Dye Ranch: Sec. 6, T12N, R14E; Coconino; 7,300 feet; 421.10;
a. 38.03 acres; cattle; partly in sec. 7, establishment date unknown.
8. Fite Property: Sec. 32, T5N, R28E; Apache; 7,660 feet; 621.10;
a. size unknown; 1972; cattle; partly in sec. 3, 4, 9, T4N, R28E.
9. Hancock Tract Parcel 1: SW1/4 sec. 4, T11N, R19E; Navajo; 6,400 feet; 221.20, 224.10;
a. 160 acres approx.; livestock; establishment date unknown.
10. Hancock Tract Parcel 2: NE1/4 sec. 9, T11N, R19E; Navajo; 6,400 feet; 221.20, 224.10;
a. 160 acres approx.; livestock; establishment date unknown.
11. Koger Pasture: Sec. 24, T19N, R11E; Coconino; 5,938-6,310 feet; 224.10, 422.30, 422.40;
a. 640 acres; 1975; photos on file; bison, cattle; some use by elk and occasionally by stray bison.
12. P.S. Ranch: N1/2 sec. 10, T4N, R28E; Apache; 7,624 feet; 324.00, 621.10;
a. 160 acres; 1968; cattle; partly in sec. 3.
13. Roper Lake: Sec. 7, 8, T8S, R26E; Graham; 3,100 feet; 233.20, 621.00;
a. size unknown; 1969; cattle.
14. Texas Hill No. 2: Sec. 30, 31, T6S, R13E; Yuma; 350 feet; 233.20, 531.20;
a. 80 acres; 1947; cattle.
15. Three Points Range: Sec. 30, 31, T15S, R10E; Pima; 2,500-2,800 feet; 531.10;
a. 1,281.48 acres; 1968; cattle.
16. Tillman Ranch: Sec. 9, 10, T12N, R14E; Coconino; 7,100 feet; 421.10;
a. 20.71 acres; cattle; establishment date unknown.
17. Vincent Ranch: Sec. 3, 4, T12N, R13E; Coconino; 7,300 feet; 421.10;
a. 36.41 acres; cattle; establishment date unknown.

18. Wolfe Ranch: Sec. 18, 19, T12N, R14E; Coconino; 7,400 feet; 421.10;
a. 31.41 acres; cattle; establishment date unknown.

ARIZONA STATE LAND DEPARTMENT

19. Aravaipa Remote Area: NW1/4 sec. 20, T6S, R19E; Graham; 3,600 feet; 423.10;
a. 2 acres; vegetation data on file; photos on file; livestock.
20. Big Horn Sheep Inclosure (AGF): SE1/4 sec. 4, T6S, R18E; Pinal; 3,300-4,000 feet; 423.10;
a. 112 acres; 1957; vegetation data on file; photos on file; livestock; excludes livestock and formerly confined bighorn sheep.
21. Chew Exclosure: NW1/4 sec. 2, T17S, R31E; Cochise; 4,480 feet; 523.20;
a. 10 acres approx.; 1958; livestock; proposed Natural Area; (Chew and Chew 1965).
22. Coconino Plateau Remote Area: Sec. 16, T26N, R3W; Coconino; 6,000 feet; 224.10;
a. 5 acres; livestock.
23. Kendall Plot (ARS): SE1/4 sec. 36, T19S, R23E; Cochise; 4,880 feet; 422.10;
a. one-fourth acre approx.; 1963; vegetation data on file; photos on file; cattle.
24. Kent Smith Wildlife Exclosure (BLM): SE1/4 sec. 10, T18N, R14W; Mohave; 3,200 feet; 522.00;
a. 300 by 300 feet; 1967; livestock.
b. 50 by 50 feet; 1967; livestock, deer.
c. 6 by 6 feet; 1967; livestock, deer, rodents.
25. La Cienega Exclosure (BLM): NE1/4 sec. 6, T16N, R16W; Mohave; 2,840 feet; 522.10;
a. 300 by 350 feet approx.; 1967; livestock.
26. Lucky Hills Watershed (ARS): NW1/4 sec. 36, T19S, R22E; Cochise; 4,580 feet; 523.20;
a. 20 acres; 1963; vegetation data on file; photos on file; cattle;
b. 2.8 acres sprayed with herbicide, seeded to grass, 1975.
27. Montijo Flat (ARS): SW1/4 sec. 31, T19S, R22E; Cochise; 4,200 feet; 523.20;
a. 2 acres approx.; 1965; cattle, rabbits; shrubs removed, seeded to blue grama.
28. Pacific Western Exclosure (SCS): NE1/4 sec. 28, T9S, R26E; Graham; 3,840 feet; 423.60;
a. 1 acre; 1936; photos on file; livestock.
29. St. Johns Remote Area: NE1/4 sec. 4, T11N, R29E; Apache; 6,700 feet; 224.10;
a. 30 acres approx.; livestock.

30. TU8 Plot (ARS): SE 1/4 sec. 32, T19S, R23E; Cochise; 4,670 feet; 423.10;
a. 1 acre approx.; 1963; vegetation data on file; photos on file; cattle, rabbits.

BUREAU OF LAND MANAGEMENT

Phoenix District

31. Alamo Road: Sec. 34, T10N, R8W; Yavapai; 2,850 feet; 522.10;
a. 200 by 200 feet; livestock; establishment date unknown.
32. Big Ranch Range Exclosure: NE1/4 sec. 22, T25N, R20W; Mohave; 2,840 feet; 423.20, 522.20;
a. 213 by 213 feet; 1956; livestock.
33. Blue Tank Exclosure: SE1/4 sec. 12, T19N, R15W; Mohave; 4,640 feet; 323.10;
a. 278 by 278 feet; 1965; livestock.
b. 49 by 49 feet; 1965; livestock, deer.
34. Buckskin Exclosure: SW1/4 sec. 7, T10N, R12W; Yuma; 1,600 feet; 531.10;
a. 200 by 200 feet; 1976; vegetation data on file; photos on file; cattle, burros.
35. Canyon Ranch Exclosure: NW1/4 sec. 20, T24N, R16W; Mohave; 3,155 feet; 423.10;
a. 300 by 350 feet approx.; 1967; livestock.
36. Constellation Road Exclosure: SW1/4 sec. 27, T8N, R4W; Yavapai; 2,700 feet; 531.10;
a. 150 by 200 feet; 1976; vegetation data on file; photos on file; cattle.
37. Double Dike Remote Area: NE1/4 sec. 13, T19S, R7E; Pima; 5,750 feet; 225.20;
a. 40 acres; livestock.
38. End Water Study Plot: NW1/4 sec. 19, T24N, R11W; Mohave; 4,600 feet; 422.10;
a. 300 by 350 feet approx.; 1967; livestock.
39. Gold Basin Range Exclosure: SE1/4 sec. 26, T27N, R18W; Mohave; 3,200 feet; 522.10;
a. 213 by 213 feet; 1956; livestock.
40. Hells Canyon Exclosure: NE1/4 sec. 19, T24N, R13W; Mohave; 4,880 feet; 323.10;
a. 309 by 309 feet; 1965; livestock.
b. 40 by 40 feet; 1965; livestock, deer.
41. La Cienega Range Exclosure: SE1/4 sec. 36, T16N, R17W; Mohave; 2,760 feet; 522.10;
a. 213 by 213 feet approx.; 1956; cattle.

42. Lower Hualapai Exclosure: S1/2 sec. 2, T19N, R15W; Mohave; 4,000 feet; 323.10;
 - a. 300 by 300 feet; 1965; vegetation data on file; photos on file; cattle.
 - b. 20 by 20 feet; 1965; vegetation data on file; photos on file; cattle, deer.
43. Park Exclosure: NW1/4 sec. 12, T10N, R13W; Yuma; 1,300 feet; 531.20;
 - a. 200 by 300 feet; 1976; vegetation data on file; photos on file; cattle, burros.
44. Quail Springs Range Exclosure: NE1/4 sec. 10, T23N, R19W; Mohave; 3,360 feet; 423.30;
 - a. 213 by 213 feet; 1956; livestock.
45. Rincon Study Plot: NW1/4 sec. 9, T23N, R11W; Mohave; 5,000 feet; 423.10;
 - a. 300 by 350 feet; 1970; cattle.
46. Small Mammal Research Site: Sec. 21, T11S, R9E; Pima; 2,200 feet; 531.10;
 - a. 640 acres; 1971; livestock; was IBP validation site. In Arizona State Parks Board Natural Area No. 73.
47. Tenny Lower Study Plot: NW1/4 sec. 25, T27N, R16W; Mohave; 2,960 feet; 522.20;
 - a. 300 by 350 feet; 1972; livestock.
48. Tenny Upper Study Plot: NE1/4 sec. 19, T28N, R15W; Mohave; 5,320 feet; 224.10;
 - a. 300 by 350 feet; 1972; livestock; plot chained, seeded to crested and western wheat grasses.
49. Upper Hualapai Exclosure (AGF): SW1/4 sec. 14, T20N, R15W; Mohave; 6,400 feet; 323.10;
 - a. 380 by 306 feet; 1965; livestock.
 - b. 50 by 50 feet; 1965; livestock, deer.
50. Upper Music Mountain Exclosure: NE1/4 sec. 6, T26N, R14W; Mohave; 5,440 feet; 323.10;
 - a. 328 by 328 feet; 1965; livestock.
 - b. 39 by 39 feet; 1965; livestock, deer.
51. Wickenburg-Alamo Area: Sec. 11, T10N, R13W; Yuma; 1,350 feet; 531.20;
 - a. 1 acre; 1976; livestock.
52. Adams Peak Remote Area: SE1/4 sec. 17, T16S, R22E; Cochise; 5,400 feet; 225.20;
 - a. 150 by 80 feet; photos on file; livestock; apparently never grazed by domestic livestock.
53. Antelope Well Seeding Exclosure East: E1/2 sec. 15, T12S, R29E; Cochise; 3,680 feet; 523.20;
 - a. 209 by 209 feet; 1966; photos on file; cattle; root plowed and seeded.
 - b. Size unknown; 1966; photos on file; cattle, rodents; enclosed in previous plot.
 - c. 209 by 209 feet; 1966; photos on file; cattle; untreated.
 - d. Size unknown; 1966; photos on file; cattle, rodents; enclosed in previous plot.
54. Antelope Well Seeding Exclosure West: SE1/4 sec. 17, T12S, R29E; Cochise; 3,540 feet; 523.50;
 - a. 209 by 209 feet; 1967; photos on file; livestock; seeded to Lehmann lovegrass.
 - b. 209 by 209 feet; 1967; photos on file; livestock; untreated.
55. Bear Springs Flat Exclosure North: SE1/4 sec. 18, T6S, R24E; Graham; 2,890 feet; 523.20;
 - a. 1 acre; 1971; cattle; root plowed, seeded.
 - b. 33 by 33 feet; 1971; cattle, rodents; enclosed in previous plot.
56. Bear Springs Flat Exclosure South: SW1/4 sec. 36, T6S, R23E; Graham; 3,040 feet; 523.20;
 - a. 2 acres; 1971; vegetation data on file; photos on file; livestock; root plowed; seeded to Lehmann lovegrass.
 - b. 33 by 33 feet; 1971; vegetation data on file; photos on file; cattle, rodents; enclosed in previous plot.
 - c. 2 acres; 1971; vegetation data on file; photos on file; livestock; no treatment.
 - d. 33 by 33 feet; 1971; vegetation data on file; photos on file; cattle, rodents; enclosed in previous plot.
57. Bitter Creek: Sec. 31, T6S, R32E; Greenlee; 3,750 feet; 423.20;
 - a. 1 acre; 1953; livestock.
58. Lee Exclosure: NE1/4 sec. 24, T6S, R23E; Graham; 2,970 feet; 523.20;
 - a. 1 acre; 1968; vegetation data on file; photos on file; livestock; root plowed; seeded to Lehmann lovegrass.
 - b. 33 by 33 feet; 1968; vegetation data on file; photos on file; livestock, rodents; enclosed in previous plot.
 - c. 1 acre; 1968; vegetation data on file; photos on file; livestock; no treatment.
 - d. 33 by 33 feet; 1968; vegetation data on file; photos on file; livestock, rodents; enclosed in previous plot.
59. Mineral Park Exclosure: NW1/4 sec. 7, T14S, R27E; Cochise; 6,350 feet; 323.10;
 - a. 1-1/2 acres; 1962; livestock.

Safford District

60. New Well Seeding Exclosure East: NE 1/4 sec. 5, T9S, R28E; Graham; 3,300 feet; 523.60;
 - a. 1 acre; 1970; vegetation data on file; photos on file; livestock; root plowed; seeded to grass.
 - b. size unknown; 1970; vegetation data on file; photos on file; livestock, rodents; enclosed in previous plot.
 - c. 1 acre; 1970; vegetation data on file; photos on file; livestock; undisturbed.
 - d. size unknown; 1970; vegetation data on file; photos on file; livestock, rodents; enclosed in previous plot.
 61. New Well Seeding Exclosure West: SW1/4 sec. 25, T8S, R27E; Graham; 3,160 feet; 523.60;
 - a. 1 acre; 1970; vegetation data on file; photos on file; livestock; root plowed; seeded to grass.
 - b. size unknown; 1970; vegetation data on file; photos on file; livestock, rodents; enclosed in previous plot.
 - c. size unknown; 1970; vegetation data on file; photos on file; livestock, rodents; also enclosed in first plot.
 62. Pima Plots: Sec. 10, 11, 15, 16, 21, 22, T6S, R23E; Graham; 3,200 feet; 423.60, 523.20;
 - a. 2 square miles; 1963; vegetation data on file; cattle; brush control, seeding.
 63. Red Hills Exclosure: NW 1/4 sec. 36, T3S, R23E; Graham; 4,300 feet; 423.10;
 - a. 2 acres; 1971; vegetation data on file; photos on file; cattle.
 - b. 25 by 25 feet; 1971; vegetation data on file; photos on file; cattle, deer; enclosed in previous plot.
 64. Ryan Seeding Exclosure: SE1/4 sec. 7, T11S, R29E; Cochise; 3,400 feet; 523.60;
 - a. 209 by 209 feet; 1967; photos on file; livestock; seeded to blue panic and Lehmann lovegrass.
 - b. 209 by 209 feet; 1967; photos on file; livestock; untreated.
 65. Santa Teresa No. 1: SE1/4 sec.13, T7S, R20E; Graham; 4,700 feet; 423.10;
 - a. 200 by 200 feet; 1973; cattle, horses.
 66. Santa Teresa No. 2: SE1/4 sec. 11, T7S, R20E; Graham; 4,700 feet; 423.40;
 - a. 200 by 200 feet; 1972; livestock; fence cut 1977; grazed.
 67. Test Well Exclosure: NW1/4 sec. 4, T11S, R27E; Graham; 3,850 feet; 423.60;
 - a. 1 acre; 1936; vegetation data on file; livestock.
 68. Timber Draw Reseeding Exclosure: N1/2 sec. 19, T11S, R28E; Graham; 3,600 feet; 423.60;
 - a. 209 by 209 feet; 1968; vegetation data on file; photos on file; livestock; root plowed; seeded to Lehmann lovegrass.
 - b. size unknown; 1968; vegetation data on file; photos on file; livestock, rodents; enclosed in previous plot.
 - c. 209 by 209 feet; 1968; vegetation data on file; photos on file; livestock; untreated.
 - d. size unknown; 1968; vegetation data on file; photos on file; livestock, rodents; enclosed in previous plot.
 69. Van Gausig Exclosure: NW1/4 sec. 21, T10S, R26E; Graham; 4,190 feet; 423.60;
 - a. 209 by 209 feet; 1967; vegetation data on file; photos on file; livestock; root plowed; seeded to grass.
 - b. size unknown; 1967; vegetation data on file; photos on file; livestock, rodents; enclosed in previous plot.
 - c. 209 by 209 feet; 1967; vegetation data on file; photos on file; livestock; untreated.
 - d. size unknown; 1967; vegetation data on file; photos on file; livestock, rodents; enclosed in previous plot.
- Strip District**
70. Antelope Trail Study Plot: NW1/4 sec. 26, T41N, R9W; Mohave; 4,450 feet; 521.00;
 - a. 330 by 330 feet; 1969; livestock.
 71. Big Horn Sheep Inclosure: Sec. 24, T40N, R15W; Mohave; 4,000 feet; 522.00;
 - a. 1 square mile approx.; 1978; livestock; also in sec. 23, 25; big horn sheep confined within.
 72. Big Sage Natural Area: NE1/4 sec. 28, T40N, R1E; Coconino; 5,900 feet; 224.10;
 - a. 160 acres; 1972; cattle; adjacent land plowed and seeded; established natural area (BLM).
 73. Black Rock Mountain Study Plot: SW1/4 sec. 1, T39N, R14W; Mohave; 6,800 feet; 221.20;
 - a. 330 by 330 feet; 1965; livestock.
 74. Bundy Study Plot: NW1/4 sec. 21, T35N, R9W; Mohave; 6,250 feet; 222.10;
 - a. 550 by 330 feet; 1965; livestock.
 75. Carroll Study Plot: SW1/4 sec. 19, T36N, R9W; Mohave; 6,300 feet; 521.10;
 - a. 330 by 330 feet; 1965; livestock.

76. Cedar Knoll: SE1/4 sec. 8, T39N, R1W; Coconino; 5,640 feet; 521.10;
a. 1 acre; 1955; cattle; established between 1950 and 1960.
77. Chamberlain Pugh Study Plot: NW1/4 sec. 20, T39N, R2W; Coconino; 5,200 feet; 521.10;
a. 330 by 330 feet; 1968; livestock.
78. Cougar Spring Exclosure Fence: Sec. 25, T39N, R15W; Mohave; 6,400 feet; 321.10;
a. 1 by 1/4 mile; 1965; livestock.
79. Houserock Valley Parker Place: SW1/4 sec. 8, T38N, R4E; Coconino; 5,100 feet; 422.00;
a. 75 by 75 feet; 1927; cattle; partly disturbed cemetery.
80. Ide Valley Study Plot: NE1/4 sec. 5, T38N, R13W; Mohave; 5,000 feet; 521.10;
a. 330 by 330 feet; 1965; livestock.
81. Jacob Well Study Plot: NE1/4 sec. 8, T37N, R15W; Mohave; 3,700 feet; 521.30;
a. 2 acres; 1968; livestock; burned prior to fencing.
82. Low Mountain Study Plot: E1/2 sec. 31, T40N, R13W; Mohave; 6,600 feet; 224.10;
a. 208 by 416 feet; 1970; livestock;
b. 104 by 208 feet; 1970; big game.
83. Main Street Study Plot: NE1/4 sec. 15, T38N, R11W; Mohave; 5,000 feet; 422.20;
a. 330 by 330 feet; 1965; livestock.
84. Maple Spring Exclosure: NW1/4 sec. 20, T39N, R13W; Mohave; 5,800 feet; 224.10;
a. one-half acre; 1977; livestock; encloses spring.
85. Miller Range and Wildlife Study Plot: NW1/4 sec. 23, T39N, R2W; Coconino; 5,500 feet; 521.10;
a. 330 by 330 feet; 1968; livestock.
86. Mud Spring Study Plot: SE1/4 sec. 24, T38N, R14W; Mohave; 4,000 feet; 522.00;
a. 330 by 330 feet; 1971; livestock.
87. Parker Exclosure Fence: Sec. 26, T39N, R10W; Mohave; 4,300 feet; 422.00;
a. 960 acres; 1952; photos on file; livestock; also in sec. 27, 34, 35.
88. Poverty Mountain Wildlife Exclosure: Sec. 25, T35N, R12W; Mohave; 5,900 feet; 224.10;
a. 800 by 800 feet; 1976; livestock; parts cleared, plowed, burned, and seeded.
89. Salt Draw Study Plot: SW1/4 sec. 26, T32N, R13W; Mohave; 6,080 feet; 224.10;
a. 660 by 660 feet; 1965; livestock; seeded to wheat grass.
90. Seegmiller Mt. No. 1 Study Plot: Sec. 5, 6, T39N, R11W; Mohave; 5,400 feet; 224.10;
a. 330 by 330 feet; 1965; livestock.
91. Seegmiller Mt. No. 2 Study Plot: SE1/4 sec. 25, T40N, R12W; Mohave; 5,700 feet; 224.10;
a. 330 by 330 feet; 1965; livestock.
92. Soapstone Study Plot: SW1/4 sec. 17, T38N, R12W; Mohave; 5,100 feet; 224.10;
a. 330 by 330 feet; 1969; livestock.
93. Sunset Study Plot: NE1/4 sec. 7, T38N, R4W; Mohave; 4,850 feet; 321.00;
a. 325 by 325 feet; 1967; livestock.
94. Temple Trail Study Plot: NW1/4 sec. 23, T38N, R9W; Mohave; 5,540 feet; 422.00;
a. 330 by 330 feet; 1965; livestock.
95. Trails End Study Plot: SE1/4 sec. 20, T39N, R14W; Mohave; 6,800 feet; 224.10;
a. 330 by 330 feet; 1967; livestock; includes 20 by 20 feet wildlife exclosure; seeded to wheatgrass.
96. Trumbull Mt. Wildlife Exclosure: SE1/4 sec. 5, T34N, R8W; Mohave; 6,600 feet; 221.20;
a. 800 by 800 feet; 1976; livestock; plowed and seeded in part.
97. White Rock Soapstone Plot: NE1/4 sec. 12, T38N, R13W; Mohave; 5,200 feet; 224.10;
a. 330 by 330 feet; 1967; livestock.
98. White Sage YCC Exclosure: Sec. 21, T39N, R1W; Coconino; 5,800 feet; 521.10;
a. 330 by 330 feet; 1977; livestock.
99. White Tank Seeding Exclosure: Sec. 34, T39N, R12W; Mohave; 5,000 feet; 521.10;
a. 120 acres; 1949; livestock; seeded to crested wheat grass.
100. Wildcat Study Plot: NE1/4 sec. 5, T33N, R12W; Mohave; 5,800 feet; 521.10;
a. 330 by 330 feet; 1965; livestock.
101. Woolley Study Plot: NW1/4 sec. 33, T37N, R4E; Coconino; 5,400 feet; 422.00;
a. 330 by 330 feet; 1971; livestock.

Yuma District

102. Lake Havasu 1: SE1/4 sec. 14, T12N, R19W; Mohave; 640 feet; 531.20;
a. 231 by 66 feet; 1974; livestock.
103. Lake Havasu 2: SW1/4 sec. 12, T12N, R19W; Mohave; 820 feet; 531.20;
a. 231 by 66 feet; 1974; livestock.

INDIAN RESERVATIONS

Fort Apache

104. Airport Flats: Sec. 2, T7N, R17E; Gila; 5,200 feet; 422.10, 422.40;
a. 153 by 137 feet; 1963; vegetation data on file; photos on file; livestock; area burned, root plowed, seeded in 1961.
105. G Wash: SW1/4 sec. 7, NW1/4 sec. 18, T5N, R21E; Gila; 5,120 feet; 422.10;
a. 309 by 618 feet; 1940; vegetation data on file; photos on file; livestock; juniper cleared south half, 1941.

Papago

106. Black Mountain Remote Area: Sec. 31, T15S, R13E; Pima; 3,500 feet; 531.00;
a. 70 acres; vegetation data on file; photos on file; cattle, horses; steep mountain with slopes of loose rock; (Ferguson 1950).

MULTIPLE OWNERSHIP

Arizona State Land Department and Private

107. Sombrero Butte Remote Area: NE1/4 sec. 27, T8S, R18E; Pinal; 5,570 feet; 225.20, 423.50;
a. 120 acres; vegetation data on file; photos on file; cattle; accessible to deer but not livestock.

Arizona State Land Department, Private, and USDA Forest Service

108. The Research Ranch, Inc.: Sec. 13-17, 21-24, 26-28, 34-36, T21S, R18E; Santa Cruz; 4800-5200 feet; 225.20, 422.10, 423.10;
a. 8,000 acres; 1969; vegetation data on file; photos on file; livestock; (Bahre 1977, Bonham 1972).

Arizona State Land Department and University of Arizona

109. Tumamoc Hill (UA): Sec. 15, T14S, R13E; Pima; 2,369-3,108 feet; 531.10, 531.20;
a. 869 acres; 1907; vegetation data on file; photos on file; livestock; (Gibble 1950, Martin and Turner 1977, Murray 1959, Shreve 1929, Shreve 1937, Spalding 1909).

Bureau of Land Management and Private

110. Aravaipa Canyon Primitive Area: T6S, R17, 18, 19E; Pinal Co. and Graham Co.; 2,600-3,700 feet; 223.00, 423.00, 531.00;
a. 5,107 acres; 1969; vegetation data on file; photos on file; livestock.

PRIVATE

111. Canelo Hills Cienega: Sec. 33, T21S, R18E; Santa Cruz; 4,950 feet; 223.20, 225.20;
a. 165 acres; 1969; livestock; owned by Nature Conservancy.
112. Clarence May Memorial (AGF): Sec. 8, 9, 17, T17S, R31E; Cochise; 5,100 feet; 523.50;
a. size unknown; 1952; cattle; grazed by horses.
113. Dos Cabezas Cemetery: NE1/4 sec. 31, T14S, R27E; Cochise; 5,050 feet; 423.10;
a. 4 + acres; 1925; cattle; ungrazed cemetery; 1/3 area disturbed; establishment date approx.
114. Greenlee Country Club: S1/2 sec. 17, T6S, R31E; Greenlee; 3,550 feet; 523.20, 523.50;
a. 320 acres; 1950; livestock; also includes N1/2 sec. 20, T6S, R31E; partly disturbed.
115. Greenlee County Airport: Sec. 36, T5S, R30E; Greenlee; 3,680 feet; 423.20;
a. 500 acres; 1940; livestock; partly disturbed.
116. Luna Lake Wildlife Area (AGF): Sec. 17, T5N, R31E; Apache; 8,046 feet; 621.10;
a. 6.2 acres; cattle.
117. Meteor Crater Remote Area: Sec. 13, 24, T19N, R12E; Coconino; 5,125-5,725 feet; 422.00;
a. 320 acres; photos on file; livestock.
118. Safford Airport: Sec. 6, T7S, R27E; Graham; 3,158 feet; 423.20;
a. 600 acres; 1937; photos on file; livestock; date approx.; part of sec. 1, T7S, R26E; partly disturbed.
119. Sonoita Creek: Sec. 11, 12, 13, 14, T22S, R15E; Santa Cruz; 4,000 feet; 223.20, 233.10;
a. 312 acres; 1966; livestock; owned by Nature Conservancy; (Smith 1974).
120. St. Johns LDS Remote Area: S1/2 sec. 3, T14N, R28E; Apache; 6,000 feet; 224.10;
a. 200 acres approx.; photos on file; livestock.

U.S. DEPARTMENT OF DEFENSE

121. Fort Huachuca: T22S, R20E; Cochise; 4,000-8,410 feet; 221.00, 225.00, 423.00, 523.00;
a. 73,000 acres; 1877; photos on file; livestock; most of area ungrazed by livestock since 1949.

USDA FOREST SERVICE

Apache-Sitgreaves National Forest

Alpine Ranger District

122. Browse Exclosure 1 (AGF): SE1/4 sec. 3, T3N, R31E; Greenlee; 6,100 feet; 225.20;
a. 1 acre; vegetation data on file; cattle; establishment date unknown.
123. Browse Exclosure 2 (AGF): SW1/4 sec. 33, T4N, R31E; Greenlee; 6,700 feet; 225.20;
a. 1 acre; vegetation data on file; cattle; establishment date unknown.
124. Browse Exclosure 3 (AGF): SW1/4 sec. 27, T4N, R31E; Greenlee; 6,700 feet; 225.20;
a. 1 acre; vegetation data on file; cattle; establishment date unknown.
125. Campbell Blue Streambottom: Sec. 31, 32, T4N, R32E; Greenlee; 6,550 feet; 223.10;
a. 1/2 by 1/4 mile; 1935; cattle; fall or spring use by cattle since 1973.
126. Double Cienega Exclosures: NW1/4 sec. 18, T3N, R29E; Greenlee; 9,000 feet; 411.00;
a. 1 acre; cattle, big game; establishment date unknown.
b. 1 acre; cattle; establishment date unknown.
127. Grant Creek Fence Plot (AGF): W1/2 sec. 11, T3N, R30E; Greenlee; 6,000 feet; 323.10;
a. 3 acres; 1960; cattle.
128. Luna Lake Wildlife Area (AGF): Sec. 17, T5N, R31E; Apache; 8,046 feet; 621.10;
a. 100.8 acres; cattle; establishment date unknown.
129. Red Hill Fence Plot (AGF): NW1/4 sec. 34, T4N, R31E; Greenlee; 6,500 feet; 323.10;
a. 3 acres; 1960; cattle.
130. State Line Streambottom: SE1/4 sec. 5, T4N, R32E; Greenlee; 6,400 feet; 223.10;
a. size unknown; 1935; cattle; also in sec. 8; seasonal cattle use since 1973.
131. Swafford Canyon Streambottom: Sec. 5, 24, T4N, R31E; Greenlee; 6,000 feet; 223.10;
a. 1 by 1/2 mile; 1935; cattle.

132. Upper Blue Spring Streambottom: Sec. 18, T4N, R32E; Greenlee; 6,200 feet; 223.10;
a. size unknown; 1935; cattle; also in three adjacent sections; seasonal cattle use since 1973.

Clifton Ranger District

133. Coal Creek: NE1/4 sec. 9, T4S, R32E; Greenlee; 5,720 feet; 221.20;
a. 95 by 91 feet; 1926; cattle.
134. Eagle Administrative Study Plot: NW1/4 sec. 19, T1S, R29E; Greenlee; 5,840 feet; 422.10;
a. 75 by 75 feet; 1926; photos on file; cattle.
135. East Eagle Exclosure: NE1/4 sec. 4, T2N, R28E; Greenlee; 7,000 feet; 225.20;
a. 3 acres; 1961; vegetation data on file; photos on file; cattle, big game.
b. 3 acres; 1961; vegetation data on file; photos on file; cattle.
136. Juan Miller Range Study Plot: NW1/4 sec. 9, T2S, R29E; Greenlee; 6,120 feet; 224.10;
a. 50 by 75 feet; 1928; photos on file; cattle.
137. Maple Peak Range Study Plot: SW1/4 sec. 2, T1S, R31E; Greenlee; 6,400 feet; 225.20;
a. 75 by 75 feet; 1931; photos on file; cattle.
b. 75 by 75 feet; 1931; photos on file; cattle, deer.
138. Strayhorse Exclosure: NE1/4 sec. 14, T2N, R29E; Greenlee; 7,700 feet; 221.20;
a. 650 by 150 feet; 1965; photos on file; cattle; evidence of slight cattle use.

Pinedale Ranger District

139. Potato Patch (AGF): SE1/4 sec. 24, T11N, R17E; Navajo; 6,800 feet; 221.00, 421.00;
a. 5 acres; 1958; cattle.

Springerville Ranger District

140. Basin Lake: NW1/4 sec. 18, T6N, R28E; Apache; 9,100 feet; 411.00;
a. 82 acres; 1936; vegetation data on file; photos on file; cattle; cattle completely excluded 1978; grazed rarely before.
141. Beehive: NW1/4 sec. 19, T8N, R27E; Apache; 9,300 feet; 411.00;
a. one-fourth acre approx.; livestock, deer, elk; establishment date unknown.
b. one-fourth acre approx.; livestock; establishment date unknown.

142. Crosby Crossing: Sec. 13, T6N, R28E; Apache; 8,800 feet; 411.00;
a. 34 acres; 1938; cattle.

143. Sheep Springs: Sec. 31, T8N, R27E; Apache; 9,200 feet; 411.00;
a. 100 by 100 feet; 1924; vegetation data on file; photos on file; sheep.

144. Udall Spring: SE1/4 sec. 9, T8N, R26E; Apache; 9,400 feet; 411.00;
a. 50 by 100 feet; cattle; establishment date unknown.

145. Water Canyon: Sec. 28, T8N, R29E; Apache; 7,300 feet; 422.10;
a. 70 by 100 feet; 1939; vegetation data on file; cattle, horses.

Coconino National Forest

Beaver Creek Ranger District

146. Cedar Mountain: Sec. 28, T14N, R6E; Yavapai; 4,000 feet; 423.60;
a. size unknown; 1940; livestock; fence reconstructed in 1966.

147. Mud Tanks: SW1/4 sec. 25, T13N, R7E; Yavapai; 6,000 feet; 224.10;
a. 660 by 330 feet; 1949; livestock; plot reseeded to grasses; area plowed.

148. School House Draw Plot: NW1/4 sec. 20, T15N, R6E; Yavapai; 3,900 feet; 423.50;
a. 1 acre; 1930; cattle, horses.

149. V Bar V Plot: SW1/4 sec. 9, T14N, R6E; Yavapai; 3,880 feet; 423.50;
a. 205 by 205 feet; vegetation data on file; photos on file; livestock; established before 1940.

Blue Ridge Ranger District

150. Fred Haught Remote Area: E1/2 sec. 31, T13N, R11E; Coconino; 7,300 feet; 221.20;
a. 200 acres; livestock; 200-foot high sandstone mesa.

151. Jumbo Pasture Remote Area: Sec. 35, T14N, R10E; Coconino; 7,000 feet; 221.20;
a. 160 acres; livestock.

Flagstaff Ranger District

152. Cedar Ranch - Highway 180: NW1/4 sec. 16, T25N, R5E; Coconino; 7,200 feet; 224.10;
a. 100 by 100 feet; 1957; cattle; establishment may be before 1957.

153. Hochderffer Aspen Regeneration Plot: SE1/4 sec. 9, T22N, R6E; Coconino; 8,300 feet; 221.20;
a. 2.5 acres; 1966; photos on file; cattle.

154. Intersection of Road 231 and Road 75: NE1/4 sec. 13, T20N, R5E; Coconino; 7,200 feet; 221.20;
a. 450 by 150 feet; cattle, sheep; establishment date unknown, but before 1968.

155. Road 526 Area: NE1/4 sec. 1, T20N, R5E; Coconino; 7,200 feet; 421.10;
a. 450 by 200 feet; 1967; cattle; establishment date approximate.

Mormon Lake Ranger District

156. Black Springs: Sec. 8, T20N, R7E; Coconino; 6,900 feet; 221.20;
a. size unknown; 1912; vegetation data on file; photos on file; livestock; fence needs extensive repairs.

157. Double Springs: SW1/4 sec. 14, T18N, R8E; Coconino; 7,500 feet; 221.20;
a. 10.7 acres; vegetation data on file; photos on file; livestock; establishment date unknown.

158. Schnebley Hill: SE1/4 sec. 35, T18N, R6E; Coconino; 6,000 feet; 224.10;
a. 100 by 100 feet; 1940; cattle.

Sedona Ranger District

159. Beaverhead: SE1/4 sec. 25, T16N, R5E; Yavapai; 4,500 feet; 224.10;
a. 50 by 50 feet; 1935; cattle.

160. Dry Creek: SE1/4 sec. 33, T18N, R5E; Yavapai; 4,600 feet; 224.10;
a. 12.5 acres; 1950; vegetation data on file; photos on file; livestock.

161. Dutch Kid Study Plot: NW1/4 sec. 28, T17N, R6E; Yavapai; 3,800 feet; 423.50;
a. size unknown; 1962; vegetation data on file; photos on file; cattle.

162. Oak Creek: Sec. 19, T17N, R5E; Yavapai; 4,400 feet; 224.10;
a. 1 acre approx.; 1940; vegetation data on file; photos on file; livestock.

163. Schuerman Mt.: SE1/4 sec. 16, T17N, R5E; Yavapai; 4,440 feet; 224.10;
a. 1 acre; 1940; livestock.

164. White Hills: SE1/4 sec. 19, T17N, R4E; Yavapai; 4,100 feet; 423.00;
a. 10 acres; 1935; vegetation data on file; photos on file; livestock.

165. Windmill: NW1/4 sec. 6, T17N, R5E; Yavapai; 4,400 feet; 423.00;
a. 30 by 30 feet; 1930; cattle.

Coronado National Forest

Douglas Ranger District

166. Barfoot (AGF): SE1/4 sec. 29, T17S, R30E; Cochise; 8,500 feet; 421.00;
a. 3 acres; 1957; cattle, deer; fence needs extensive repairs.
167. Halfmoon Game Enclosure K-2: NW1/4 sec. 17, T17S, R23E; Cochise; 5,200 feet; 225.20;
a. 2.5 acres; 1965; vegetation data on file; photos on file; cattle, deer.
b. 5 acres; 1965; vegetation data on file; photos on file; cattle.
168. Hands Pass Enclosure (AGF): E1/2 sec. 32, T16S, R30E; Cochise; 6,650 feet; 225.20;
a. 3 acres; 1957; cattle.
b. 3 acres; 1957; cattle, deer.
169. NE of Winkler Ranch (AGF): SW1/4 sec. 21, T19S, R29E; Cochise; 5,500 feet; 225.20;
a. 3 acres; 1957; cattle, deer.
170. Pinery Canyon Administrative Study: SE1/4 sec. 18, T17S, R30E; Cochise; 6,000 feet; 225.10;
a. 175 by 300 feet; 1930; cattle.
171. Rucker Administrative Study; SE1/4 sec. 22, T19S, R29E; Cochise; 5,700 feet; 225.20;
a. 400 by 125 feet approx.; 1939; vegetation data on file; cattle; fence needs extensive repairs.
172. Rucker Station (AGF): SE1/4 sec. 14, T19S, R29E; Cochise; 5,800 feet; 323.10;
a. 3 acres; 1957; cattle, deer.
173. Upper Cave Creek (AGF): SW1/4 sec. 26, T17S, R30E; Cochise; 7,800 feet; 225.10;
a. 3 acres; 1957; cattle, deer.

Nogales Ranger District

174. Alamo: SE1/4 sec. 35, T23S, R13E; Santa Cruz; 3,780 feet; 423.50;
a. 150 by 150 feet; 1945; photos on file; cattle.
175. Aliso Springs Riparian Enclosure: SE1/4 sec. 22, T21S, R12E; Santa Cruz; 4,000 feet; 223.10, 225.20;
a. 40 acres; 1978; cattle.
176. Canoa: SW1/4 sec. 5, T22S, R9E; Pima; 4,600 feet; 423.50;
a. 75 by 75 feet; 1963; photos on file; cattle; seeded to Lehmann lovegrass.

177. Cedar Dam Riparian Enclosure: NE1/4 sec. 25, T21S, R11E; Pima; 4,100 feet; 223.20;
a. 40 acres; 1978; cattle.

178. Cedar Tank Riparian Enclosure: SW1/4 sec. 23, T21S, R11E; Pima; 3,800 feet; 223.10;
a. 40 acres; 1978; cattle.

179. Fresnal: NW1/4 sec. 4, T23S, R9E; Pima; 4,600 feet; 423.10;
a. 100 by 150 feet; photos on file; cattle; establishment date unknown.

180. Hog Canyon Study Plot: SE1/4 sec. 21, T20S, R16E; Santa Cruz; 4,700 feet; 225.20;
a. 150 by 200 feet approx.; 1940; vegetation data on file; photos on file; cattle, horses.

181. Lopez Range Study Plot: NW1/4 sec. 14, T20S, R16E; Santa Cruz; 4,940 feet; 422.10;
a. 45 by 54 feet; 1930; photos on file; cattle.
b. 45 by 54 feet; 1930; photos on file; cattle.
c. 150 by 150 feet; 1940; photos on file; cattle.

182. Mesquite Control Project: SW1/4 sec. 21, T23S, R13E; Santa Cruz; 3,700 feet; 423.30;
a. 2,640 by 300 feet; 1943; photos on file; cattle; light winter use by horses.

183. Montana Dam Riparian Enclosure: SE1/4 sec. 7, T23S, R11E; Pima; 4,000 feet; 223.20;
a. 40 acres; 1978; cattle.

184. Pena Blanca Canyon: Sec. 26, T23S, R12E; Santa Cruz; 4,500 feet; 233.00;
a. 400 acres; 1978; cattle.

185. SRER Plot 1: NE1/4 sec. 8, T19S, R15E; Pima; 4,100 feet; 423.00;
a. 55 by 170 feet; 1916; vegetation data on file; photos on file; cattle; enlarged to present size in 1935.

186. SRER Plot 1A (Rodent): NW1/4 sec. 2, T19S, R14E; Pima; 3,560 feet; 423.00;
a. 600 by 310 feet; 1918; vegetation data on file; photos on file; cattle.
b. 270 by 155 feet; 1918; vegetation data on file; photos on file; cattle, rabbits.
c. 270 by 155 feet; 1918; vegetation data on file; photos on file; cattle, rabbits; (Glendening 1952).

187. SRER Plot 2B (Eriopoda): SE1/4 sec. 30, T18S, R15E; Pima; 3,760 feet; 423.00;
a. 298 by 300 feet; 1918; vegetation data on file; photos on file; cattle.
b. 298 by 300 feet; 1925; vegetation data on file; photos on file; cattle.
c. 50 by 50 feet; 1932; vegetation data on file; photos on file; cattle.

188. SRER Plot 3: NE1/4 sec. 6, T19S, R15E; Pima; 3,850 feet; 423.00;
 - a. 75 by 200 feet; 1918; vegetation data on file; photos on file; cattle; enlarged to present size in 1936.
189. SRER Plot 3C (Jack Rabbit): NW1/4 sec. 29, T18S, R15E; Pima; 3,760 feet; 423.00;
 - a. 215 by 215 feet; 1918; vegetation data on file; cattle, rabbits.
 - b. 66 by 66 feet; 1918; vegetation data on file; cattle, rodents.
 - c. 66 by 149 feet; 1918; vegetation data on file; cattle.
 - d. 26 by 65 feet; 1918; vegetation data on file; cattle; rabbits.
190. SRER Plot 4: NE1/4 sec. 34, T18S, R14E; Pima; 3440 feet; 423.00;
 - a. 136 by 88 feet; 1916; vegetation data on file; cattle; enlarged to present size in 1935.
191. SRER Plot 5: NW1/4 sec. 35, T18S, R14E; Pima; 3,480 feet; 423.00;
 - a. 44 by 146 feet; 1916; vegetation data on file; cattle; enlarged to present size in 1935.
192. SRER Plot 6: SW1/4 sec. 32, T18S, R15E; Pima; 3,880 feet; 423.00;
 - a. 300 by 65 feet; 1916; vegetation data on file; cattle; enlarged to present size in 1935.
193. SRER Plot 7 (Huerfano): NW1/4 sec. 21, T18S, R15E; Pima; 3,860 feet 423.00;
 - a. 220 by 72 feet; 1917; vegetation data on file; photos on file; cattle; enlarged several times to present size, last in 1932.
194. SRER Plot 8: NE1/4 sec. 33, T18S, R15E; Pima; 4,360 feet; 423.00;
 - a. 88 by 125 feet; 1917; vegetation data on file; photos on file; cattle; enlarged in 1935; burned in 1959.
195. SRER Plot 9: NW1/4 sec. 14, T19S, R14E; Pima; 3,700 feet; 423.00;
 - a. 71 by 73 feet approx.; 1917; vegetation data on file; photos on file; cattle; enlarged to present size in 1936.
196. SRER Plot 10: NE1/4 sec. 23, T19S, R14E; Pima; 3,900 feet; 423.00;
 - a. 75 by 150 feet; 1917; vegetation data on file; cattle; enlarged to present size in 1935.
197. SRER Plot 11 (White House): NW1/4 sec. 23, T19S, R14E; Pima; 3,900 feet; 423.00;
 - a. 75 by 150 feet; 1918; vegetation data on file; photos on file; cattle; enlarged to present size in 1932.
198. SRER Plot 12 (Northwest Station): NW1/4 sec. 33, T17S, R14E; Pima; 2,960 feet; 423.00;
 - a. 117 by 207 feet; 1916; vegetation data on file; photos on file; cattle; enlarged to present size in 1935.
199. SRER Plot 13: NE1/4 sec. 19, T19S, R15E; Pima; 4,180 feet; 423.00;
 - a. 101 by 126 feet; 1921; vegetation data on file; photos on file; cattle; enlarged to present size in 1932; (Caraher 1970).
200. SRER Plot 14 (Forest Station): N1/2 sec. 19, T19S, R15E; PIMA; 4,180 feet; 423.00;
 - a. 291 by 107 feet; 1921; vegetation data on file; photos on file; cattle; original seven plots rebuilt in 1931.
201. SRER Plot 15: NE1/4 sec. 13, T19S, R14E; Pima; 4,000 feet; 423.00;
 - a. 150 by 150 feet; 1916; vegetation data on file; photos on file; cattle; original 60 by 60-foot plot enlarged in 1935; (Caraher 1970).
202. SRER Plot 16: NW1/4 sec. 11, T19S, R14E; Pima; 3,640 feet; 423.00;
 - a. 75 by 100 feet; 1921; vegetation data on file; cattle; enlarged to present size in 1936.
203. SRER Plot 17 (Road Station): NW1/4 sec. 11, T19S, R14E; Pima; 3,640 feet; 423.00;
 - a. 187 by 324 feet; 1921; vegetation data on file; photos on file; cattle; originally established as eight plots; referenced in 1932.
204. SRER Plot 18: NE1/4 sec. 4, T19S, R15E; Pima; 4,280 feet; 423.00;
 - a. 82 by 164 feet; 1918; vegetation data on file; photos on file; cattle; enlarged in 1932 and 1935.
205. SRER Plot 20: NE1/4 sec. 33, T18S, R14E; Pima; 3,280 feet; 423.00;
 - a. 75 by 50 feet; 1916; vegetation data on file; photos on file; cattle; original plot enlarged in 1935 or 1936.
206. SRER Plot 21: NE1/4 sec. 13, T19S, R14E; Pima; 3,920 feet; 423.00;
 - a. 75 by 150 feet; 1916; vegetation data on file; cattle; original 60 by 60-foot plot enlarged in 1935. (Caraher 1970).
207. SRER Plot 22: NE1/4 sec. 16, T18S, R15E; Pima; 3,850 feet; 423.00;
 - a. 60 by 200 feet approx.; 1916; vegetation data on file; photos on file; cattle; enlarged in 1935 or 1936.

208. SRER Plot 23 (Box Station): SW1/4 sec. 5, SE1/4 sec. 6, T19S, R15E; Pima; 3,920 feet; 423.00;
 - a. 286 by 312 feet; 1922; photos on file; cattle.
 - b. 286 by 312 feet; 1922; photos on file; cattle.
 - c. 286 by 312 feet; 1922; photos on file; cattle; all plots rebuilt in 1932.
209. SRER Plot 24: NE1/4 sec. 19, T18S, R15E; Pima; 3,620 feet; 423.00;
 - a. 0.3 acre; 1916; vegetation data on file; cattle.
210. SRER Plot 27 (Mesa Station): SW1/4 sec. 1, T19S, R14E; Pima; 3,700 feet; 423.00;
 - a. 75 by 362 feet; 1925; photos on file; cattle; had three parts with deferred grazing until 1936.
 - b. 50 by 112 feet; 1936; photos on file; cattle.
211. SRER Plot 28 (Foothill Station): NE1/4 sec. 8, T19S, R15E; Pima; 4,100 feet; 423.00;
 - a. 100 by 362 feet; 1925; vegetation data on file; photos on file; cattle; several original plots rebuilt as one plot in 1935.
 - b. 25 by 150 feet; 1935; vegetation data on file; photos on file; cattle.
212. SRER Plot 29 (Southwest Station): SE1/4 sec. 33, T18S, R14E; Pima; 3,340 feet; 423.00;
 - a. 64 by 180 feet; 1925; vegetation data on file; photos on file; cattle.
 - b. 64 by 120 feet; 1925; vegetation data on file; photos on file; cattle.
 - c. 64 by 120 feet; 1925; vegetation data on file; photos on file; cattle; nine original plots rebuilt as three plots in 1932.
213. SRER Plot 31 (Parker Station): NE1/4 sec. 17, T19S, R15E; Pima; 4,340 feet; 423.00;
 - a. 50 by 100 feet; 1931; vegetation data on file; photos on file; cattle; 1/2 plot formerly a rodent enclosure.
 - b. 50 by 50 feet; 1931; vegetation data on file; photos on file; cattle.
 - c. 39 by 148 feet; 1935; vegetation data on file; photos on file; cattle; fertilizer experiment plot.
214. SRER Plot 32 (West Station): NW1/4 sec. 30, T18S, R14E; Pima; 3,040 feet; 423.00;
 - a. 72 by 72 feet; 1930; photos on file; cattle.
215. SRER Plot 33 (Desert Grassland): NE1/4 sec. 13, T19S, R14E; Pima; 3,860 feet; 423.00;
 - a. 7 acres approx.; 1931; photos on file; cattle; old enclosures inside; part burned in 1965.
 - b. 100 by 65 feet; 1931; photos on file; cattle; plot has an additional 25 by 25-foot section; (Brown 1950, Cable 1965).
216. SRER Plot 34 (Burroweed): SE1/4 sec. 4, T19S, R14E; Pima; 3,400 feet; 423.00;
 - a. 164 by 328 feet; 1932; vegetation data on file; photos on file; cattle; half of plot burned in 1932.
 - b. 50 by 50 feet; 1932; vegetation data on file; photos on file; cattle.
217. SRER Plot 35 (Isolation Transect): SW1/4 sec. 35, T18S, R14E; Pima; 3,520 feet; 423.00;
 - a. 131 by 787 feet; 1932; vegetation data on file; photos on file; cattle; one-half plot formerly rodent proof.
218. SRER Plot 36: NW1/4 sec. 30, T18S, R14E; Pima; 3,040 feet; 423.00;
 - a. 98 by 297 feet; 1934; photos on file; cattle; burroweed control tests.
219. SRER Plot 37: SE1/4 sec. 3, T19S, R14E; Pima; 3,540 feet; 423.00;
 - a. 203 by 300 feet; 1934; vegetation data on file; photos on file; cattle; burroweed control tests.
220. SRER Plot 38: NE1/4 sec. 28, T18S, R15E; Pima; 4,120 feet; 423.00;
 - a. 98 by 292 feet; 1934; photos on file; cattle; burroweed control tests.
221. SRER Plot 39: NE1/4 sec. 17, T19S, R15E; Pima; 4,300 feet; 423.00;
 - a. 39 by 148 feet; 1935; photos on file; cattle.
222. SRER Plot 40: NE1/4 sec. 29, T18S, R15E; Pima; 3,880 feet; 423.00;
 - a. 78 by 78 feet; 1935; cattle.
223. SRER Plot 41: NE1/4 sec. 16, T19S, R14E; Pima; 3,560 feet; 423.00;
 - a. 325 by 189 feet; 1935; photos on file; cattle; seeded to Lehmann lovegrass before 1946.
224. SRER Plot 42 (Boothill Sta.): SW1/4 sec. 1, T19S, R14E; Pima; 3,700 feet; 423.00;
 - a. 60 by 180 feet; 1935; vegetation data on file; photos on file; cattle; rodent enclosure no longer intact.
 - b. 60 by 100 feet; 1935; vegetation data on file; photos on file; cattle.
 - c. 200 by 40 feet; 1935; vegetation data on file; photos on file; cattle.
 - d. 60 by 80 feet; 1935; vegetation data on file; photos on file; cattle.
225. SRER Plot 43(Water Retention): SW1/4 sec.11, T19S, R14E; Pima; 3,660 feet; 423.00;
 - a. 900 by 186 feet; 1935; vegetation data on file; photos on file; cattle; application of artificial rain; seeded in 1940.

226. SRER Plot 44 (Gravelly Ridge): W1/2 sec. 30, T18S, R14E; Pima; 3,040 feet; 423.00;
 a. 3,075 by 200 feet; 1934; vegetation data on file; photos on file; cattle.
 b. 3,075 by 200 feet; 1934; vegetation data on file; photos on file; cattle; some seeding and transplanting in both plots. (Barr 1955).
227. SRER Plot 45: SE1/4 sec. 36, T18S, R14E; Pima; 3,720 feet; 423.00;
 a. 46.2 acres; 1935; vegetation data on file; photos on file; cattle; water spreading area; (Thatcher and Hart 1974).
228. SRER Plot 129 (Northeast): SW1/4 sec. 32, T17S, R15E; Pima; 3,300 feet; 423.00;
 a. 60 by 80 feet approx.; 1938; vegetation data on file; photos on file; cattle.
229. SRER Plot 130: NE1/4 sec. 1, T19S, R14E; Pima; 3,800 feet; 423.00;
 a. 640 by 640 feet; 1938; vegetation data on file; photos on file; cattle.
 b. 300 by 325 feet; 1938; vegetation data on file; photos on file; cattle; formerly rodent enclosure; hardware cloth badly damaged.
 c. 325 by 350 feet; 1938; vegetation data on file; photos on file; cattle; (Tiedemann 1970).
230. SRER Plot 131: NW1/4 sec. 10, T19S, R14E; Pima; 3,700 feet; 423.00;
 a. 660 by 660 feet; 1938; vegetation data on file; photos on file; cattle.
 b. 330 by 330 feet; 1938; vegetation data on file; photos on file; cattle; formerly rodent enclosure.
 c. 330 by 330 feet; 1938; vegetation data on file; photos on file; cattle; (Tiedemann 1970).
231. SRER Plot 205: NW1/4 sec. 31, T18S, R15E; Pima; 3,740 feet; 423.00;
 a. 420 by 600 feet; 1946; vegetation data on file; photos on file; cattle; artificial seeding; burned in 1956; (Cable 1961).
232. SRER Plot 280: SE1/4 sec. 31, 32, T18S, R14E; Pima; 3,180 feet; 423.00;
 a. 800 by 1,000 feet; 1965; vegetation data on file; photos on file; cattle; four-wing saltbush vs. mesquite study; (Cable 1972).
233. SRER Plot 286 (NE Enclosure): Sec. 34, T17S, R15E; Pima; 3,400-3,800 feet; 423.00;
 a. 1 by 1-3/4 mile; 1967; photos on file; cattle; also in sec. 3, T18S.
234. SRER Plot 295 (IBP): T18S, R14E; Pima; 3,100-3,260 feet; 423.00;
 a. 200 acres; 1970; vegetation data on file; photos on file; cattle; no treatment.
- b. 200 acres; 1970; vegetation data on file; photos on file; cattle; diesel oil applied to mesquite.
- c. 200 acres; 1970; photos on file; cattle; no treatment.
- d. 200 acres; 1970; photos on file; cattle; mesquite chained; shrub control plots, 1976.
- e. 12.5 acres; 1974; photos on file; cattle, rodents; enclosed in first plot; (Tschirley and Martin 1961).
235. SRER Plot 302: SE1/4 sec. 33, SW1/4 sec. 34, T18S, R15E; Pima; 4,360-4,800 feet; 423.00;
 a. 160 acres; 1972; cattle.

Safford Ranger District

236. CN Ranch: Sec. 7, T10S, R25E; Graham; 5,200 feet; 225.20;
 a. 240 by 178 feet; 1939; vegetation data on file; cattle.
237. Gillespie: NW1/4 sec. 18, T10S, R26E; Graham; 4,300 feet 423.50;
 a. 220 by 225 feet; 1939; vegetation data on file; photos on file; cattle.
238. Pinaleno Mountains: Graham; 5,000-10,500 feet; 211.00, 221.00, 222.00, 223.00, 225.00;
 a. size unknown; livestock; recreation area.
239. Pitchfork: Sec. 2, T10S, R24E; Graham; 5,000 feet; 423.50;
 a. 150 by 250 feet; 1939; vegetation data on file; cattle.
240. Stockton Pass Recreation Area: SW1/4 sec. 1, T10S, R24E; Graham; 5,000 feet; 225.20;
 a. 12 acres approx.; 1966; livestock.
241. Stockton Pass Wildlife Enclosure: NW1/4 sec. 13, T10S, R24E; Graham; 5,800 feet; 225.20;
 a. 2.5 acres; 1963; vegetation data on file; cattle, deer.
 b. 5 acres; 1963; vegetation data on file; cattle.

Santa Catalina Ranger District

242. Ash Creek: T15S, R18E; Pima; 4,000 feet; 233.00;
 a. 6 by 0.5 miles; 1977; cattle.
243. Butterfly Peak Natural Area: T11S, R16E; Pima; 5,000-7,000 feet; 212.00, 221.00, 223.00, 225.00;
 a. 1,000 acres; 1935; photos on file; livestock; unfenced; light grazing by cattle.
244. Pusch Ridge Wilderness Area: Pima; 3,000-9,100 feet; 211.00, 212.00, 221.00, 222.00, 223.00, 225.00, 233.00, 423.00, 531.00;
 a. 56,480 acres; vegetation data on file; photos on file; livestock.

245. Santa Catalina Natural Area: T11S, R15E; Pima; 5,600-8,800 feet; 221.00, 223.00, 225.00;
a. 4,131 acres; 1927; vegetation data on file; photos on file; livestock; first Natural Area in U.S. for primarily scientific study; (Cheatham et al. 1977).

Sierra Vista Ranger District

246. Lone Mountain: NW1/4 sec. 3, T24S, R19E; Cochise; 5,550 feet; 422.10; 1935; vegetation data on file; photos on file; livestock; untreated.
a. size unknown; 1963; vegetation data on file; photos on file; livestock;
b. size unknown; soil surface ripped in 1963.
247. Lower Parker Canyon: Sec. 18, T23S, R19E; Santa Cruz; 4,400 feet; 233.00;
a. 2.5 by 0.5 mile; 1975; photos on file; cattle.
248. O'Donnell Creek Exclosure: NW1/4 sec. 33, T21S, R18E; Santa Cruz; 4,875 feet; 223.20, 225.20;
a. 2,000 by 250 feet; 1978; cattle; between Canelo Hills Cienega and the Research Ranch.
249. Vaughn Study Plot: NW1/4 sec. 31, T21S, R18E; Santa Cruz; 5,200 feet; 225.20;
a. 208 by 208 feet; 1925; vegetation data on file; photos on file; cattle, horses.
250. Vaughn Wildlife Plot: SW1/4 sec. 35, T21S, R17E; Santa Cruz; 5,350 feet; 323.10;
a. 342 by 247 feet; 1965; vegetation data on file; photos on file; cattle, deer.
b. 495 by 335 feet; 1965; vegetation data on file; photos on file; cattle.

Kaibab National Forest

Chalender Ranger District

251. Bellemont Allotment Study Plot: NE1/4 sec. 3, T21N, R4E; Coconino; 6,870 feet; 422.10;
a. 300 by 300 feet; 1940; vegetation data on file; photos on file; cattle, sheep; newly fenced in 1965.
252. Potato Hill Plot: Sec. 11, T24N, R4E; Coconino; 6,860 feet; 422.10;
a. 300 by 300 feet; 1929; vegetation data on file; photos on file; cattle.
253. Spring Valley Study Plot: NW1/4 sec. 23, T23N, R4E; Coconino; 7,300 feet; 221.20;
a. 300 by 300 feet; 1940; vegetation data on file; photos on file; cattle.

North Kaibab Ranger District

254. Buck Farm Push: NE1/4 sec. 11, T34N, R4E; Coconino; 6,000 feet; 224.10;
a. 50 by 50 feet; 1970; bison; juniper cleared; grazed by bison before 1970.
255. Castle Canyon Study Area: NW1/4 sec. 28, T36N, R2E; Coconino; 8,500 feet; 421.10;
a. 5 acres; 1959; vegetation data on file; cattle; some cattle use; seeded in 1959, 1960, 1961, and 1962.
256. East Rim Study Plot: SW1/4 sec. 21, T35N, R3E; Coconino; 8,800 feet; 211.20;
a. 1/4 acre; 1931; vegetation data on file; photos on file; cattle, deer.
b. 4-3/4 acres; 1931; vegetation data on file; photos on file; cattle.
257. Horse Spring Cow Exclosure: NW1/4 sec. 6, T37N, R2W; Coconino; 5,800 feet; 224.10;
a. 80 acres; 1954; cattle; chemical control of juniper.
258. Saddle Mountain Remote Area: T34N, R5E; Coconino; 6,200-8,400 feet; 224.10;
a. 5 square miles; photos on file; livestock; also in T34N, R4E; heavy winter deer use until 1967.
259. Sowats Road.: NW1/4 sec. 27, T36N, R2W; Coconino; 6,300 feet; 224.10;
a. 25 by 25 feet; 1931; cattle.
b. 25 by 25 feet; 1931; cattle, deer; juniper cleared; fence needs repairs in both plots.
260. Sowats Ridge No. 46: NE1/4 sec. 29, T36N, R2W; Coconino; 6,200 feet; 224.10;
a. 80 acres; 1931; cattle, deer; fence needs repairs.
261. Table Rock Push Deer Exclosure: NW1/4 sec. 27, T38N, R1W; Coconino; 6,428 feet; 224.10;
a. 1.8 acres; 1970; cattle, deer; juniper cleared.
262. Three Lakes Study Plot: SE1/4 sec. 6, T37N, R2E; Coconino; 8,300 feet; 421.00;
a. 660 by 396 feet; 1959; vegetation data on file; cattle; rototilled and planted to grass.
263. VT Exclosure: SW1/4 sec. 12, T35N, R2E; Coconino; 8,747 feet; 411.00;
a. 5 acres; 1953; vegetation data on file; photos on file; cattle, deer; enlarged in 1962.
b. 5 acres; 1962; vegetation data on file; photos on file; cattle.

264. White Pockets - Eastslide: SE1/4 sec. 6, T37N, R1W; Coconino; 6,300 feet; 224.10;
 a. 80 acres; 1954; vegetation data on file; photos on file; cattle; juniper cleared one-half acre; grass seeded one-half cleared area.
265. White Pockets Study Plot: NW1/4 sec. 9, T37N, R2W; Coconino; 6,100 feet; 224.10;
 a. 3.75 acres; 1960; vegetation data on file; cattle.
 b. 0.5 acre; 1960; vegetation data on file; cattle, deer; small plot enclosed in large plot.

Tusayan Ranger District

266. Hull Tank Administrative Site: Sec. 22, T30N, R4E; Coconino; 6,600 feet; 221.20;
 a. 480 acres; 1907; livestock.
267. McRae Study Plot: NW1/4 sec. 2, T29N, R4E; Coconino; 7,200 feet; 422.10;
 a. 30 by 30 feet; livestock; establishment date unknown.
268. Skinner Ridge Study Plots: SE1/4 sec. 18, T29N, R4E; Coconino; 7,200 feet; 221.20;
 a. 1 acre approx.; vegetation data on file; cattle, deer.
 b. 1 acre approx.; vegetation data on file; cattle; establishment date for both plots unknown.
269. Willows Camp Exclosure: NE1/4 sec. 13, T28N, R6E; Coconino; 6,600 feet; 422.10;
 a. 300 by 300 feet approx.; 1964; livestock; established between 1963 and 1965.

Williams Ranger District

270. AA Plot No. 1: NE1/4 sec. 4, T23N, R1W; Coconino; 5,800 feet; 422.10;
 a. 0.1 acre; 1932; vegetation data on file; sheep; recent juniper establishment.
271. Devil Dog Summer-Rim Plot No. 3: NW1/4 sec. 8, T21N, R1E; Coconino; 6,500 feet; 224.10;
 a. 0.1 acre; 1939; vegetation data on file; photos on file; cattle; area outside exclosure cabled in early 1950's.
272. Devil Dog Winter Plot No. 5: SW1/4 sec. 32, T21N, R1W; Coconino; 5,400 feet; 224.10;
 a. 0.1 acre; 1939; vegetation data on file; photos on file; cattle; area outside exclosure cabled in early 1950's.
273. Indian Mesa Remote Area: NW1/4 sec. 23, T21N, R1W; Coconino; 5,980 feet; 422.10;
 a. 10 acres; vegetation data on file; photos on file; livestock.

274. Irishman Dam Plot No. 4: SE1/4 sec. 31; T21N, R1W; Coconino; 5,200 feet; 224.10;
 a. 0.1 acre; 1939; vegetation data on file; photos on file; cattle, sheep; juniper becoming established.
275. Old Biological Survey Plot No. 2: NW 1/4 sec. 3, T22N, R2E; Coconino; 6,400 feet; 224.10;
 a. 0.35 acres; 1918; vegetation data on file; photos on file; cattle.
 b. 0.43 acres; 1918; vegetation data on file; photos on file; cattle, rodents; first two plots rebuilt in 1939.
 c. 0.1 acre; 1918; vegetation data on file; photos on file; cattle, rodents; (Clements et al. 1927, Clements et al. 1930, Clements et al. 1932, Taylor and Loftfield 1922, Taylor and Loftfield 1924).

276. Pingue Plot No. 1: NE1/4 sec. 10, T22N, R2E; Coconino; 6,400 feet; 224.10;
 a. 0.5 acre; 1939; vegetation data on file; photos on file; cattle.
277. Relict Mesa-Tule Allotment: NW1/4 sec. 16, T20N, R3E; Coconino; 6,900 feet; 221.20;
 a. 1-2 acres; vegetation data on file; photos on file; livestock; remote area.
278. Thirteen Mile Tank Plot No. 6: NE 1/4 sec. 10, T21N, R1W; Coconino; 5,800 feet; 224.10;
 a. 0.1 acre; 1939; vegetation data on file; photos on file; cattle; area outside exclosure cabled in early 1950's.

Prescott National Forest

Chino Valley Ranger District

279. Bar Heart Plot: NW1/4 sec. 26, T19N, R1W; Yavapai; 4,600 feet; 422.10;
 a. 1 acre; 1940; photos on file; livestock.
280. Paulden Exclosure (AGF): SE1/4 sec. 23, T18N, R2W; Yavapai; 4,700 feet; 224.10;
 a. 1 acre; 1958; cattle, deer.
281. Witty Tom Plot 1: NW1/4 sec. 12, T18N, R1E; Yavapai; 4,632 feet; 422.10;
 a. 200 by 200 feet; 1962; vegetation data on file; photos on file; cattle, horses.
282. Witty Tom Plot 2: NW1/4 sec. 12, T18N, R1E; Yavapai; 4,632 feet; 422.10;
 a. 200 by 200 feet; 1962; vegetation data on file; photos on file; cattle, horses; one-fourth mile from Witty Tom Plot 1.

Crown King Ranger District

283. Lane Mountain Watershed: T9N, R1W; Yavapai; 3,400-6,700 feet; 221.00, 223.00, 323.00, 423.00, 531.10; 25,000 acres; 1975; livestock; also in T9-1/2N, T10N, R1E.
284. Lassard Study Plot: SE1/4 sec. 33, T12N, R1E; Yavapai; 3,500 feet; 423.60;
a. 66 by 66 feet; 1925; vegetation data on file; photos on file; cattle, horses.
285. Rabbit Springs Riparian Exclosure: NW1/4 sec. 21, T10N, R2W; Yavapai; 3,400 feet; 223.20;
a. 4.5 acres; 1977; photos on file; cattle, horses.

Thumb Butte Ranger District

286. Buckman Flats (AGF): NE1/4 sec. 7, T14N, R3W; Yavapai; 5,400 feet; 323.10;
a. 1 acre; 1939; cattle.
b. 1 acre; 1939; cattle, deer; converted to deer-cattle exclosure in 1958 by AGF.
287. Doce Siding (AGF): NW1/4 sec. 17, T14N, R3W; Yavapai; 5,600 feet; 323.10;
a. 1 acre; 1956; cattle.
b. 1 acre; 1956; cattle, deer.

Verde Ranger District

288. Beasley Flat Wildlife Exclosure: Sec. 26, 34, 35, T13N, R5E; Yavapai; 3,100 feet; 423.60;
a. 130 acres; 1976; vegetation data on file; photos on file; cattle; root plowed, disced, grass seeded.
289. Johnson Wash Research Area: W1/2 sec. 4, E1/2 sec. 5, T13N, R3E; Yavapai; 4,700 feet; 323.10;
a. 90 acres; 1965; vegetation data on file; cattle.
290. Lucky Canyon Erosion Plot: NW1/4 sec. 12, T13N, R4E; Yavapai; 3,000 feet; 423.50;
a. 150 acres; 1965; photos on file; cattle.
291. Sycamore Wildlife Exclosure: Sec. 16, 20, 21, T11N, R5E; Yavapai; 5,200 feet; 223.10;
a. 1 mile by 150 feet; 1972; photos on file; cattle.
292. Yellow Jacket Wildlife Exclosure: NE1/4 sec. 33, T12N, R3E; Yavapai; 3,750 feet; 223.20;
a. 1/4 mile by 300 feet; 1975; cattle.

Walnut Creek Ranger District

293. Brushy Mt. Wildlife Exclosure: NW1/4 sec. 2, T16N, R6W; Yavapai; 5,800 feet; 221.20;
a. 1 acre; 1974; vegetation data on file; photos on file; cattle; seeded to grass following brush crushing.
294. Camp Wood Study Plot: NW1/4 sec. 3, T16N, R6W; Yavapai; 5,800 feet; 221.20;
a. 1 acre; 1939; vegetation data on file; photos on file; cattle.
295. Hyde Creek Riparian Study Exclosure: SW1/4 sec. 18, T17N, R5W; Yavapai; 5,500 feet; 223.10;
a. 10 acres; 1974; vegetation data on file; photos on file; cattle.
296. Juniper Control Study Plot: SW1/4 sec. 4, T18N, R5W; Yavapai; 5,000 feet; 423.60;
a. 1 acre; 1949; vegetation data on file; cattle; juniper removed; seeded to grass.
297. Parker Springs Study Plot: NW1/4 sec. 19, T17N, R5W; Yavapai; 5,500 feet; 323.10;
a. 1 acre; 1939; vegetation data on file; photos on file; cattle; not checked since 1964.
298. Pine Creek Riparian Study Exclosure: NW1/4 sec. 25, T17N, R6W; Yavapai; 5,500 feet; 223.10;
a. 10 acres; 1975; vegetation data on file; photos on file; cattle.
299. Red Mountain Study Plot: NE1/4 sec. 18, T19N, R5W; Yavapai; 5,000 feet; 422.10;
a. 1 acre; 1939; vegetation data on file; photos on file; cattle; exclosure not checked recently.
300. Smith Mesa Study Plot: SW1/4 sec. 30, T16N, R5W; Yavapai; 5,000 feet; 423.60;
a. 2 acres; 1963; vegetation data on file; photos on file; cattle; seeded to grass in 1966.
301. South Fork Exclosure (AGF): W1/2 sec. 30, T18N, R6W; Yavapai; 5,600 feet; 224.10;
a. 1 acre; 1965; cattle.
302. Warren Exclosure: SW1/4 sec. 32, T18N, R6W; Yavapai; 5,900 feet; 224.10;
a. 1 acre; 1965; cattle.

Tonto National Forest

Cave Creek Ranger District

303. Blackjack Plot: Sec. 18, T8N, R5E; Yavapai; 4,400 feet; 323.10;
a. 2 acres; 1939; vegetation data on file; photos on file; cattle.

304. Bronco-St. Clair Study Plot: NW1/4 sec. 22, T6N, R5E; Maricopa; 2,200 feet; 531.10;
 a. 2.5 acres; 1940; vegetation data on file; photos on file; cattle, sheep.
 b. 2.5 acres; 1940; vegetation data on file; photos on file; cattle, sheep.
305. Camp Creek Divide: Sec. 26, T7N, R5E; Maricopa; 3,500 feet; 323.10;
 a. 4 acres; 1924; vegetation data on file; photos on file; cattle; plot enlarged in 1940.
306. Magazine Mesa: Sec. 30, T8N, R5E; Maricopa; 4,000 feet; 422.10;
 a. 30 acres; 1940; vegetation data on file; photos on file; cattle.

Globe Ranger District

307. Boyce Thompson Southwest Arboretum: Sec. 33, T2S, R12E; Pinal; 2,400-3,000 feet; 223.20, 423.60;
 a. 725 acres; 1924; vegetation data on file; photos on file; cattle; also in R11E; jointly managed by ASPB, BTSA, and UA.
308. Capitan Exclosure: NE1/4 sec. 14, T2S, R15E; Gila; 5,000 feet; 323.10;
 a. 150 by 150 feet; photos on file; cattle; grazed briefly in 1978; establishment date unknown.
309. Chrysotile Demonstration Plot: SE1/4 sec. 21, T4N, R17E; Gila; 5,800 feet; 422.10;
 a. 5 acres; 1945; photos on file; cattle.
310. Fritz Special Use Pasture: NW1/4 sec. 13, T1S, R15E; Gila; 3,600 feet; 423.10;
 a. 60 acres; 1961; photos on file; cattle.
311. Jones Water: NE1/4 sec. 23, T3N, R16E; Gila; 4,287 feet; 423.10;
 a. 1/2 by 1/4 mile; photos on file; cattle; establishment date unknown.
312. JU Pasture Exclosure: NE1/4 sec. 15, T4N, R16E; Gila; 4,500 feet; 323.10;
 a. 240 square feet; photos on file; cattle; establishment date unknown; rebuilt in 1978.
313. Murry Hill Sample Plot: NE1/4 sec. 4, T2N, R14E; Gila; 4,000 feet; 423.10;
 a. 100 by 200 feet; photos on file; cattle; seeded to weeping lovegrass.
314. Nugget Mesa Rd.-Radium Allotment: SE1/4 sec. 22, T2N, R15E; Gila; 3,700 feet; 423.10;
 a. 50 by 50 feet; photos on file; cattle, horses; establishment date unknown.
 b. 132 by 132 feet; 1978; photos on file; cattle, horses; new fence includes previous exclosure.
315. Ray Road Exclosure: NW1/4 sec. 36, T2S, R12E; Pinal; 3,200 feet; 423.10;
 a. 1,200 by 450 feet; 1935; vegetation data on file; photos on file; cattle; establishment date approximate.
316. Sedow Allotment: SW1/4 sec. 3; T3N, R16E; Gila; 4,200 feet; 423.10;
 a. 200 by 200 feet; photos on file; cattle; establishment date unknown.
317. Storm Canyon Pasture Exclosure: NE1/4 sec. 6, T3N, R16E; Gila; 4,000 feet; 323.10;
 a. 50 by 50 feet; photos on file; cattle; establishment date unknown.
318. Summit plots: Sec. 4, T2N, R14E; Gila; 3,600 feet; 323.10, 531.10;
 a. 0.37 acre; 1925; vegetation data on file; photos on file; cattle.
 b. 1.23 acres; 1925; vegetation data on file; photos on file; cattle.
 c. 0.59 acre; 1925; vegetation data on file; photos on file; cattle.
 d. 0.49 acre; 1925; vegetation data on file; photos on file; cattle; shrub control and reseeding in first four plots.
 e. 0.43 acre; 1925; vegetation data on file; photos on file; cattle.
 f. 1.05 acres; 1925; vegetation data on file; photos on file; cattle.
 g. 0.49 acre; 1925; vegetation data on file; photos on file; cattle.
 h. 0.80 acre; 1925; vegetation data on file; photos on file; unfenced check plot.
 i. 0.54 acre; 1925; vegetation data on file; photos on file; unfenced check plot.
319. Winters Ranch Plot No. 79: SW1/4 sec. 32, T3N, R16E; Gila; 4,800 feet; 423.10;
 a. 200 by 200 feet; 1939; cattle; enlarged in 1944.

Mesa Ranger District

320. Blue Point Study Plot: Sec. 15, T2N, R7E; Maricopa; 1,800 feet; 531.10;
 a. 1 acre approx.; cattle, sheep; establishment date unknown.
321. Brushy Basin Exclosure: NE1/4 sec. 3, T4N, R9E; Maricopa; 4,000 feet; 323.10;
 a. 10 acres; 1969; cattle, deer; plot burned and seeded to Lehmann lovegrass.
322. Cross F Study Plot: NW1/4 sec. 19, T7N, R9E; Maricopa; 4,000 feet; 422.10;
 a. 12 acres; 1934; vegetation data on file; photos on file; cattle.

Payson Ranger District

323. Buckhead Mesa Exclosure: NW1/4 sec. 3, T11N, R9E; Gila; 5,200 feet; 224.10;
a. 93 acres; 1935; photos on file; cattle.
324. Control Rd. Exclosure: SW1/4 sec. 36, T11N, R11E; Gila; 5,800 feet; 224.10;
a. 60 acres approx.; cattle; establishment date unknown.
325. Deadman Mesa: SE1/4 sec. 24, T12N, R7E; Gila; 5,900 feet; 224.10;
a. 60 acres; vegetation data on file; photos on file; cattle; established before 1942.
326. Houston Mesa Enclosure: SE1/4 sec. 13, T11N, R10E; Gila; 5,000 feet; 224.10;
a. 4 acres; cattle; appears to have had junipers pushed; establishment date unknown.

Pleasant Valley Ranger District

327. Aztec "B" Wildlife Plot: SE1/4 sec. 24, T6N, R13E; Gila; 7,000 feet; 221.20, 223.00;
a. 10 acres; 1964; cattle; includes NW1/4 Sec.24.
328. Bottle Springs: SE1/4 sec. 6, T9N, R14E; Gila; 7,000 feet; 221.20;
a. 4 acres approx.; 1962; cattle.
329. McInturf Springs: NW1/4 sec. 27, T10N, R14E; Gila; 5,400 feet; 225.20;
a. 10 acres; 1960; cattle, sheep; establishment date approx.; seeded to weeping lovegrass.
330. Pine Creek Range Study Plot: N1/2 sec. 36, T10N, R13E; Gila; 5,900 feet; 422.00;
a. 70 acres; 1940; vegetation data on file; photos on file; cattle, sheep; original small plot enlarged unknown date; some cattle use.
331. Pine Springs Wildlife Area: Sec. 29, 30, T10N, R15E; Gila; 5,500 feet; 224.10;
a. 110 acres approx.; 1942; vegetation data on file; cattle; grazed 1977; seeded 1973, wheatgrass, clover.
332. Pleasant Valley Station Exclosure: NW1/4 sec. 29, T9N, R14E; Gila; 5,000 feet; 224.10;
a. 0.3 acre; 1941; vegetation data on file; photos on file; horses.
333. Red Lake: Sec. 27, T10N, R15E; Gila; 6,500 feet; 221.20;
a. Size unknown; 1940; vegetation data on file; photos on file; cattle; seeded; refenced in 1973.

334. Red Lake Study Plots: SW1/4 sec. 27, T10N, R14E; Gila; 6,500 feet; 221.20;
a. 5 acres; 1934; vegetation data on file; photos on file; cattle; cattle occasionally grazed until 1974 when fence repaired.
335. SAEF Workman Creek Watersheds: Sec. 33, T6N, R14E; Gila; 6,500 feet; 221.10, 221.20;
a. 1,087 acres; 1938; vegetation data on file; photos on file; cattle.
336. Thurlo: SE1/4 sec. 9, T9N, R13E; Gila; 5,300 feet; 224.10;
a. 80 acres approx.; 1966; cattle; seeded to several grass species.
337. Zellner-Cline: SE1/4 sec. 2, T9N, R14E; Gila; 6,500 feet; 221.20;
a. 5 acres approx.; 1964; cattle; Seeded with weeping lovegrass and orchard grass in 1965.

Roosevelt Ranger District

338. Three Bar Wildlife Area: T4N, R11E; Gila; 2,900-7,691 feet; 221.00, 223.00, 224.00, 225.00, 233.00, 323.00, 424.00, 531.00;
a. 38,897 acres; 1947; cattle; Also in T4N, R10E; T3N, R10E and R11E. (27).

Tonto Basin Ranger District

339. Black Hills: Sec. 34, T4N, R13E; Gila; 2,225 feet; 531.10;
a. 190 acres; 1937; vegetation data on file; photos on file; cattle; Both plots also in sec. 3 T3N.
b. 75 acres; 1958; vegetation data on file; photos on file; cattle; small plot seeded in 1958; grazed intermittently.
340. Deer Creek Plot: Sec. 7, T8N, R10E; Gila; 3,275 feet; 423.10;
a. 40 acres; 1940; vegetation data on file; photos on file; cattle; seeded to Lehmann lovegrass, 1960.
b. 40 acres; 1960; vegetation data on file; photos on file; cattle; both plots grazed from 1968 until fence repaired in 1978.
341. Dutchwoman Butte Remote Area: Sec. 14, T5N, R12E; Gila; 5,000 feet; 422.10;
a. 0.15 square mile; vegetation data on file; livestock; frequent natural burning.
342. Horrell Study Plot: SW1/4 sec. 9, T3N, R13E; Gila; 2,400 feet; 531.10;
a. 50 acres; 1937; vegetation data on file; photos on file; cattle; rebuilt in 1962.

343. SAEF Natural Drainages: NW1/4 sec. 13, T5N, R13E; Gila; 4,600 feet; 323.10;
a. 54 acres; 1936; vegetation data on file; photos on file; cattle.

NATIONAL PARK SERVICE

Canyon de Chelly

344. Wide Rock Butte Remote Area: T5N, R9W; Apache; 6,800 feet; 224.10;
a. 30 acres; deer, livestock; (Schmutz et al. 1967).

Casa Grande National Monument

345. Casa Grande Ruins National Monument: Sec. 16, T5S, R8E; Pinal; 1,420 feet; 531.20;
a. 482 acres; 1930; livestock; (Judd et al. 1971).

Chiricahua National Monument

346. Chiricahua National Monument: T16S, R29E; Cochise; 5,000-6,000 feet; 222.00, 225.00;
a. 11,000 acres; 1924; livestock; approximately 600 acres grazed until 1974; also in T17S, R30E.

Glen Canyon National Recreation Area

347. Antelope Island: T41N, R9E; Coconino; 4,200 feet; 521.30;
a. 10,000 acres; 1977; livestock; island formed by Lake Powell.

Grand Canyon National Park

348. Boysag Point Remote Area: Sec. 8, T34N, R4W; Mohave; 5,500 feet; 224.10, 521.10;
a. 70 acres; vegetation data on file; livestock; (Schmutz et al. 1967).

349. Desert View Exclosure: SE1/4 sec. 5, T30N, R5E; Coconino; 7,250 feet; 224.10;
a. 34 by 74 feet; 1934; vegetation data on file; cattle.

350. Fishtail Mesa Remote Area: Coconino; 6,000-6,200 feet; 224.00, 521.00;
a. 1,430 acres; vegetation data on file; photos on file; livestock; Latitude 36° 26' N, Longitude 112° 34' W; (Jameson et al. 1962).

351. Grand Canyon National Park: Coconino; 960-9,125 feet; 211.00, 212.00, 221.00, 223.00, 224.00, 233.00, 411.00, 421.00, 521.00, 522.00;
a. 900,000 acres; 1919; vegetation data on file; photos on file; livestock; enlarged most recently in 1975; some burro use; an additional 294,000 acres grazed by livestock; (McDougall 1947).

352. Grandview: SE1/4 sec. 21, T30N, R4E; Coconino; 7,480 feet; 221.20;
a. 50 by 58 feet; 1934; vegetation data on file; cattle.

353. Lipan Point Exclosure: SE1/4 sec. 33, T31N, R5E; Coconino; 7,250 feet; 224.10;
a. 41 by 49 feet; 1934; cattle.

354. Quarry Road Exclosure: SE1/4 sec. 14, T30N, R4E; Coconino; 7,000 feet; 224.10;
a. 50 by 50 feet; 1934; vegetation data on file; cattle.

355. South Entrance Experimental Plot No. 8: NE1/4 sec. 25, T31N, R2E; Coconino; 6,940 feet; 221.20;
a. 80 by 40 feet; 1935; vegetation data on file; cattle, deer, rabbits.

356. Ten X Road: SE1/4 sec. 18, T30N, R4E; Coconino; 7,400 feet; 221.20;
a. 58 by 66 feet; 1934; vegetation data on file; deer.

357. Yaki Burn: Sec. 19, T31N, R3E; Coconino; 7,200 feet; 224.10;
a. 29 by 39 feet; 1956; vegetation data on file; deer; used to study postfire recovery without deer access.

Montezuma Castle National Monument

358. Montezuma Castle: Sec. 8, 16, 17, T14N, R5E; Yavapai; 3,300 feet; 423.00, 531.10;
a. 500 acres; 1959; livestock; riparian area grazed; (McDougall 1960).

359. Montezuma Well: Sec. 31, T15N, R6E; Yavapai; 3,600 feet; 423.00, 531.10;
a. 240 acres; 1959; livestock; partly in sec. 6, R5E; (Spangle and Sutton 1949).

Navajo National Monument

360. Betatakin Ruin: Navajo; 6550-7150 feet; 224.10;
a. 240 acres; 1967; vegetation data on file; livestock; Latitude 36° 41' N, Longitude 110° 32' W.

361. Keet Seel Ruin: Navajo; 6,750-7,550 feet; 224.10;
a. 160 acres; 1967; vegetation data on file; livestock; Latitude 36° 46' N, Longitude 110° 30' W.

Organ Pipe National Monument

362. Armenta Well Exclosure: N1/2 sec. 24, T14S, R6W; Pima; 1,570 feet; 531.20;
a. 9.9 acres; 1963; vegetation data on file; photos on file; livestock.

363. Dos Lomas Enclosure: NW1/4 sec. 14, T18S, R5W; Pima; 1,375 feet; 531.70;
a. 3.2 acres; 1963; vegetation data on file; photos on file; livestock.

364. Organ Pipe Cactus National Monument: Pima; 1,000-4,408 feet; 423.00, 531.10, 531.20, 531.70;
a. 330,779 acres; 1937; vegetation data on file; photos on file; livestock; all cattle removed in 1978.

Petrified Forest National Monument

365. Petrified Forest National Monument: Apache and Navajo; 5,300-6,235 feet; 224.10, 422.00, 521.00;
a. 93,492 acres; 1935; livestock; completely fenced in 1968.

Saguaro National Monument

366. Rincon Mountain Unit: Pima; 2,700-8,660 feet; 221.00, 222.00, 223.00, 225.00, 233.00, 421.00, 423.00, 531.00;

a. 62,332 acres; 1933; livestock; grazing phased out 1958- 1978; equestrian use in some areas.

367. Rodent-Proof Enclosure No. 1: NW1/4 sec. 20, T14S, R16E; Pima; 2,960 feet; 531.10;
a. 50 by 50 feet; 1962; vegetation data on file; photos on file; livestock, rodents; surrounding area ungrazed by cattle since 1958.

368. Rodent-Proof Enclosure No. 2: NE1/4 sec. 20, T14S, R16E; Pima; 2,970 feet; 531.10;
a. 50 by 50 feet; 1962; vegetation data on file; photos on file; livestock, rodents; surrounding area ungrazed by cattle since 1958.

369. Rodent-Proof Enclosure No. 3: NE1/4 sec. 28, T14S, R16E; Pima; 3,200 feet; 531.10;
a. 50 by 50 feet; 1962; vegetation data on file; photos on file; livestock, rodents; surrounding area ungrazed by cattle since 1958.

370. Tucson Mountain Unit: Pima; 2,178-4,687 feet; 423.00, 531.00;
a. 16,669 acres; 1929; vegetation data on file; photos on file; livestock.

Tonto National Monument

371. Tonto National Monument: Sec. 26, 27, 34, 35, T4N, R12E; Gila; 2,300-4,000 feet; 323.00, 531.00;
a. 652 acres; 1941; livestock.
b. 468 acres; 1978; livestock; (Burgess 1965).

Tuzigoot National Monument

372. Tuzigoot National Monument: W1/2 sec. 22, T16N, R3E; Yavapai; 3,450 feet; 423.00, 531.10;
a. 43 acres; 1959; livestock.

Walnut Canyon National Monument

373. Walnut Canyon Island Remote Area: SE1/4 sec. 26, T21N, R8E; Coconino; 6,700 feet; 221.10; 221.20, 223.10, 224.10, 521.10;
a. 130 acres; photos on file; livestock; (Smith 1974).

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374. Page-Trowbridge Experimental Ranch: S1/2 sec. 27, N1/2 sec. 34, T9S, R14E; Pinal; 3,700 feet; 423.10;
a. 640 acres; 1941; vegetation data on file; photos on file; cattle; (Smith and Schmutz 1975).

ADDENDUM

The following reference areas were reported too late to be included in the main listing of this report:

BUREAU OF LAND MANAGEMENT

Strip District

375. Clayhole Enclosure, Middle: SE1/4 sec. 20, T39N, R7W; Mohave; 4,900 feet; 521.20;
a. 330 by 330 feet; 1951; vegetation data on file; photos on file; livestock.

376. Clayhole Enclosure, North: NW1/4 sec. 10, T40N, R7W; Mohave; 4,980 feet; 422.00;
a. 330 by 330 feet; 1951; vegetation data on file; photos on file; livestock.

377. Clayhole Enclosure, South: NW1/4 sec. 29, T38N, R7W; Mohave; 4,965 feet; 422.00;
a. 330 by 330 feet; 1951; vegetation data on file; photos on file; livestock.

378. Spy Mesa Remote Area: NW1/4 sec. 25, T41N, R8W; Mohave; 5,000 feet; 224.10;
a. 40 acres; vegetation data on file; photos on file; livestock; (Thatcher and Hart 1974).

FOREST SERVICE

Coronado National Forest

Nogales Ranger District

379. Bog Hole Waterfall Area (AGF): NW1/4 sec. 32, T22S, R17E; Santa Cruz; 5,075 feet; 223.20, 422.00;
a. 50 acres; 1978; livestock.

MULTIPLE OWNERSHIP

Arizona State Land Department, Bureau of Land Management, and Private

380. Wickenburg Inn: Sec. 7, 8, 9, 10, 15, 16, 17, 18, 20, 21, T8N, R5W; Yavapai; 2,200 by 2,750 feet; 531.10;
a. 4,700 acres; 1972; livestock.

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Great
Plains

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